How Crane Product Groups Will Operate... Pg. 18

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Hope for Businessmen
No Temporary Phenomenon
Are Business Executives Human?
They'll Smell Better Now
Stories of the Week
Out of Our Mailbag

Hope for Businessmen

For the last 30 years the two most influential pressure groups in American government have been labor unions and the farm bloc.

Each essentially is antagonistic to business. Each promotes policies which abet inflation. Each gets paid more and more for doing less and less.

Two trends, however, give hope and promise to the business community. They are:

(1) Membership in labor unions is declining.

(2) The number of farmers and farms continues to decline.

(3) Businessmen, at last, are becoming politically aware.

No Temporary Phenomenon

Both declines (in the numbers of farmers and union members), appear to be long-term trends.

The economics of farming are such that the small, family-type farm is obsolete. Bigger and bigger units will come—operated by fewer and fewer men, more and bigger machines.

Hence, the political power of the farm bloc is destined to dwindle.

As for union membership, the United Mine Workers provide a startling example. From a high of 600,000 card-holders, the roster has dropped to 200,000. The UAW-CIO has suffered a similar, if lesser, drop.

Reason: automation.

At the same time that lunch-bucket jobs are diminishing, the white collar work force is burgeoning. The latter type of man resists unionization.

Net: a more favorable political "climate" for business can be predicted.

Are Business Executives Human?

Public relations practitioners have had "image trouble" late-

(Continued on Page 10, Col. 1)

Show Us Cost Comparison Between Public, Private Engineers--CEC

LOS ANGELES — The Consulting Engineers Council is seeking to have the General Accounting Office of the U.S. government publish verified and objective cost comparisons of projects engineered by public as well as private engineers, as the council takes issue with some G.A.O. directives which advise government departments and agencies against the use of private engineering firms.

Ralph Westcott, president of the C.E.C., declares that this G.A.O. policy runs contrary to other announced policy of the Federal government, and "assumes" certain conclusions about costs which are not borne out by any studies.

The C.E.C. has formed a special committee to press the point of making use of private engineering talent. Principal effort will be directed towards the Federal government, because in addition to the G.A.O., the Public Works Committee of the U.S. House of Representatives has also been critical at times of the use of "outside"

(Continued on Page 4, Col. 1)

'No Progress' In Plans Seal Drive

CHICAGO — "No further progress to report at this time" was the comment last week of an official of the Chicago Chapter of the Illinois Society of Professional Engineers on its drive to get Chicago's City Building Department to require all plans and specifications of air conditioning, heating, and ventilating systems to be sealed with a professional engineer's seal.

As reported in the March 7 issue of the NEWS, the professional engineers group had opened a publicity campaign to back up its drive, and was using the Franklin death case (wherein two Evanston, Ill. residents died of carbon monoxide poisoning said to have been caused by

(Continued on Page 25, Col. 5)

Program Set for Electric Heat Show

NEW YORK CITY—Program for the First National Electric House Heating Exposition and Symposium, to be staged at the Sherman hotel in Chicago March 21-23 has been announced by Stanley B. Aronson, general chairman.

One of the features will be a luncheon talk on Tuesday, March 22, by W. Beverley Mason, Jr., assistant commissioner for technical standards, Federal Housing Administration. Another will be a seminar on heat pumps.

The Exposition and Symposium will be held under the sponsorship of the Electric House Heating Equipment Section of

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Dallas Watchdogs

Raise Level of Installations Through Strict Inspections

DALLAS—After nearly two years of operation (it was established in April, 1958) the "watchdog committee" program of the Air Conditioning & Refrigeration Contractors Association of Dallas is going strong.

Intended to assure the public of both the quality and safety of installations made by the association members, the inspection program has succeeded in a general upgrading of jobs, according to Col. John A. Smith, Jr., executive secretary.

Each month a three-man committee of the association inspects at least 10 installations made by members. A detailed report is presented by the committee chairman before the group's regular monthly meeting.

No words are minced in these reports. Names and locations are cited, and the shortcomings of the installations are spelled out, as this writer can testify.

Most of the jobs currently inspected appear to meet all the standards set up by the association, and that fact is carefully noted in the committee's monthly report, but where the jobs

(Continued on Page 4, Col. 3)

Through 1,600 Operations

New 'Aseptic-Air' System Stops Infections

LOS ANGELES — After six months of tests and more than 1,600 surgical operations, Mount Sinai hospital and clinic here reports that the new "Aseptic-Air" system for its five surgeries has reduced post-surgical infection to absolute zero.

First U. S. hospital to use the near perfect air sterilization system, Mount Sinai recently called in the press to report its amazing results.

Lester M. Finkelstein, Mount Sinai president, acclaimed it one of the major break-throughs in a century in man's struggle against infectious germs.

"Since the installation of this system in August, 1959," Finkelstein declared, "Mount Sinai has not had a single case of post operative wound infection due to contamination in surgery."

News that the system was being installed at Mount Sinai was first reported in the April 6, 1959 issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS.

The Aseptic-Air system was developed by medical researcher Reginald Robbins of Los Angeles in collaboration with Prof. Gennody W. Potapenko, associate professor of geophysics at California Institute of Technology.

At Mount Sinai, the system uses a bank of 72 helicoid-baffled, high intensity germicidal ultraviolet lamps to treat all air entering the surgeries and kill 99.9% of the bacteria in it.

The germ-free air is ducted via an existing air conditioning system and through a no-draft ceiling plenum into the operating rooms. A downward directed airflow sweeps the surgeries clean of airborne contaminants.

While the Mount Sinai installation was the first, a modified air sterilizer now feeds ultraviolet germ-free air to incubators at St. John's hospital in Santa Monica, Calif.

Installation of initial systems for a four-year ward air study is now under way at the Veterans Administration's big Wadsworth General hospital in West Los Angeles.

The study is jointly sponsored by the VA, the National Institute of Health (a segment of the U. S. Dept. of Health, Education, and Welfare), and the California Department of Public Health.

Though designed primarily for hospitals, the system could also be used in food processing plants, research laboratories, schools, and in the space missile industries.

Douglas Aircraft Co., Inc. is reportedly considering using the system to sterilize moon-

(Continued on Page 25, Col. 1)

Talks Go on To End Strike at Carrier

SYRACUSE, N. Y. — Work stoppage continued through the week of March 7 at the main Carrier Corp. plant here, but negotiations seeking to end the strike are continuing without a break, Carrier Corp. officials report. Representatives of the Federal Mediation and Conciliation Service are assisting in the negotiations.

(Continued on Page 25, Col. 5)

York Expands Line of Packaged Heat Pumps

YORK, Pa. — To meet the growing market for all-electric heating and cooling, York Div. of Borg-Warner Corp. has expanded its Packaged Product heat pump line for 1960.

The new line was recently announced and presented at the company's distributor conferences held in York, Las Vegas, New Orleans, and Chicago.

Austin Rising, York's vice president and director of marketing, stated: "We believe our sales of 'packaged' heat pumps will more than double in 1960.."

York offers seven room air conditioner heat pumps in its 1960 line. One is available in the company's compact, lightweight "Adventurer" series. The "Discoverer" series and the multi-

(Continued on Page 4, Col. 5)

BRI Session To Examine Air Cleaning And Purification Within Buildings

WASHINGTON, D. C.—Members of the Building Research Institute will present a program on air cleaning and purification within buildings at the spring conferences April 5-7 at the Statler-Hilton hotel in New York City.

Organized under the chairmanship of John E. Haines, vice president of Minneapolis-Honeywell Regulator Co., the program will deal with classification, detection, and removal of odors and air contaminants, air purification in hospitals, and with methods being developed for assuring better air quality.

The conference will also pinpoint areas in which additional research is needed to arrive at the ideal atmospheric environment in commercial, industrial, and residential buildings.

Among the authorities who will address the meeting will be Arthur J. Hess, immediate past president of American Society of Heating, Refrigerating & Air-Conditioning Engineers, who will keynote the conference with his address titled "What is Pure Air?" Hess is a partner in the firm of Hess, Greiner & Polland of Los Angeles.

Finn J. Larson of Minneapolis-Honeywell, will report on some of his experiments with atmospheric control in space capsules, in an address titled "Future Methods of Air Purification."

Other speakers and their topics: H. L. Barnebey, Barnebey-Cheney Co.—"Odors: Classification, Detection, and Removal"; Louis C. McCabe, Resources Research, Inc.—"Removal of Air Contaminants"; William Green, University of Minnesota—"Air Purification In Hospitals"; W. L. McGrath, Carrier Corp.—"New Concepts for Obtaining Better Air Quality."

This program is one of eight to be presented during the three-day BRI session. Others will be concerned with paints and coatings, insulated masonry cavity walls, adhesives for bonding drywall and cementitious materials, formats for describing plastic building materials, the performance of buildings in terms of maintenance and operating costs, and sessions in which new research proposals will be presented by colleges, universities, and private laboratories.

General chairman for the conferences is architect Milo D. Folley of Syracuse, N. Y. All of the programs are open to the interested public as well as to BRI members and guests, in accordance with the policy of the Building Research Institute, which is a unit of the Div. of Engineering and Industrial Research of the National Academy of Sciences-National Research Council in Washington.

Information and registration material may be obtained from Milton C. Coon, Jr., executive director of BRI, 2101 Constitution Ave., Washington 25, D. C.

B&G Now on Exchange

MORTON GROVE, Ill. — The full capitalization of Bell & Gossett Co. was admitted to trade recently on the Midwest Stock Exchange, R. E. Moore, Bell & Gossett president announced. The stock was formerly traded over the counter.

No other Heat Pump...Only the

PERFECTION TRI-PAK®

offers you the ULTIMATE in installation flexibility

REMOTE CONDENSER — compressor and air cooled condenser located outside.

INDOOR COIL — compact coil unit has extra row of tubing for balanced heating capacity.

AIR HANDLER—quiet blower unit mounts on side, top or bottom of indoor coil unit for installation flexibility.

VERSATILITY
Blower unit mounts easily on top, bottom or sides of matching indoor coil for unlimited choice of air delivery patterns.
VERTICAL
HORIZONTAL

PERFECTION TRI-PAK is a TRUE heat pump and a true profit-maker. "Climate-designed" for more sales in any area, Tri-Pak is "profit-designed" for easy installation, handling and servicing. No other heat pump offers such versatility in installation.

THREE AND FIVE-TON CAPACITIES for any type of home, store or office.

CLIMATE-DESIGNED with extra inside coil area, automatic de-icing, exclusive UL-approved strip heaters for extra capacity in heating cycle.

COMPACT DESIGN saves space. Fewer, less bulky units to handle and store.

LOW-COST OPERATION creates customer enthusiasm. You can prove lower original, installation and operating costs than individual furnace and air conditioning system.

GUARANTEE, WARRANTY closes more sales. Guaranteed capacity, five-year compressor warranty are customer "clinchers."

BE A PERFECTIONIST! See your nearby Perfection Distributor for full information on the complete Perfection line. Ask him for the free booklet, "How to become a PERFECTIONIST." It's new, and loaded with sales tips. If you don't know him, ask us for his name.

PERFECTION DIVISION
HUPP CORPORATION
CLEVELAND 10, OHIO

Journeyman Training Near for Northern California RACCA

SAN FRANCISCO—Negotiations are nearing completion on a new contract between Refrigeration & Air Conditioning Contractors Association of Northern California and United Association Local 38.

M. Maroni Smith, general counsel for RACCA-NC, said the new contract includes a certified journeyman training program.

The successful certified journeyman training program now in operation in Los Angeles and Orange counties by agreement between RACCA of Southern California and Refrigeration Fitters branch of U.A. Local 250, was carefully studied by representatives from San Francisco for both RACCA and Local 38.

Their favorable report was adopted by both groups and the nearly completed contract with the new training program is the result.

A meeting was set for early March of the training committee and trustees handling the certified journeyman training program. Harry L. Bowe, coordinator for the Los Angeles training program, attended the meeting. It has been arranged that he will also coordinate the Bay Area program.

George Eskra of Ray Winther Co. is chairman of the training committee.

Building Trades OK Arbitration, But--

WASHINGTON, D. C. — The building trades unions said recently that they are not opposed to binding arbitration of their disputes with industrial unions provided agreement was obtained on the scope and the limits of the arbitration.

Such arbitration, the building group emphasized, must be limited to disputes and could not deal with "basic jurisdiction."

This limitation makes it seem unlikely that the AFL-CIO can settle the long-standing jurisdictional feud between craft and industrial groups. Industrial union group spokesmen have charged that the building unions blocked the road to a settlement.

Reciprocal Councils Lunch March 23

DETROIT—Reciprocal Heating and Cooling Councils for the Detroit area will hold a joint luncheon meeting Wednesday, March 23, to discuss important changes to the constitutions of both councils.

The luncheon will be held in Sammy's Restaurant, Coolidge Highway at W. Nine Mile Rd., Oak Park.

The Reciprocal Cooling Council will elect new officers at this meeting. At its last meeting in January, the council accepted the city of Dearborn and Redford Township into membership.

Cities of Hamtramck and Ypsilanti and Avon Township joined the Reciprocal Heating Council in January.

April 5-7

Air Conditioning and Gas Vs. Electric Heating To Be AGA Conference Topics

NEW YORK CITY — Three talks on gas air conditioning and one on "The Facts About Gas and Electric Heat" are among presentations scheduled for the forthcoming American Gas Association Industrial and Commercial Gas Sales Conference.

The conference will be held April 5-7 at the Shamrock Hilton in Houston, Texas.

Opening day, Tuesday, April 5, has been designated Industrial Gas Day. One of the speakers at the morning session will be Wilfred R. Barnard, manager, Unitrane and Absorption Sales Dept., The Trane Co.

Speaking on the topic, "A New Man On the Team," Barnard will discuss Trane's product development program. He will also add some comments on the future gas air conditioning market and Trane's stake in this future.

In another talk at this session, Roger L. Conkling, H. Zinder & Associates, Inc., Washington, D. C., will discuss price trends of the past and various factors affecting future price trends of natural gas compared with coal, oil, and electric energy.

In one of three talks to be given Tuesday afternoon, Frank Wright, utilization manager, Southern Union Gas Co., Dallas, will speak on "Small Gas Turbines for Power Generation and Air Conditioning."

The presentation on "The Facts About Gas and Electric Heat" will be made on Wednesday morning during a general session by J. R. Hammers, architect representative, Northern Illinois Gas Co. During his talk, Hammers will reveal the new gas heating story in the 1960's.

Thursday, April 7, is Commercial Gas Day. During the afternoon session, Norbert K. Hall, manager, refrigeration and air conditioning, The Ready-Power Co., Detroit, will speak on "Ready Market for Commercial Air Conditioning Equipment."

All attending the conference are required to register (fee: $15) and admission to sessions is by badge only.

Social events include a Gas Appliance Manufacturers' "Friendship Hour" starting at 5:30 p.m. Wednesday. This will be followed by the annual dinner and entertainment.

Ready To Check on Savings

Houston Taking Steps To Give School Air Conditioning a Try In New Bldg.

HOUSTON, Texas—Reportedly impressed by designs and figures presented by an architectural firm during a recent special conference, the local school board paved the way for building the first completely air conditioned school in Houston.

Building such a school, the board acknowledged, would lead to air conditioning all schools constructed from then on.

Declared Supt. John W. McFarland: "If and when air conditioned buildings can be constructed really economically, let's do it because we can do a much better job teaching."

The architectural firm of Golemon and Rolfe presented figures showing that air conditioned buildings can be constructed more economically than naturally-ventilated ones.

With this encouragement from the superintendent and data from the architects, the board started making plans.

The five board members present agreed to have Dr. McFarland investigate the possibilities of air conditioning the next high school to be built.

By then, the board members hope, the firm's design will have been sold to some school district and an actual construction cost determined to prove theories.

The firm theorizes it could now build facilities equal to those of Bellaire High school, which it designed several years ago, at a saving of $500,000 while making the building air conditioned and more flexible.

Said Chairman Henry A. Petersen: "It is incredible to think we are going along without air conditioning schools." Added Dr. W. W. Kemmerer, board secretary: "What other institution which serves the public today would think of putting up a building without air conditioning it but the public schools."

Agreement was indicated by other board members present. They instructed the superintendent to try to negotiate with three architectural firms who have already done some work on the proposed school to determine if they would accept a cancellation from the board, and also to get as accurate figures as are available on savings an air conditioned school might offer the district.

NWAHACA Meeting Set for Nov. 14 In Cleveland

CLEVELAND—The 47th annual convention of the National Warm Air Heating & Air Conditioning Association will be held at the Statler-Hilton hotel here starting on Nov. 14, 1960, according to Managing Director James M. Martin.

Details of the schedule of events, program, and speakers will be announced during the coming weeks, Martin said.

Also, Martin pointed out that the convention and annual meeting will be at the start of the week rather than mid-week as in past years.

G-E Announces Availability of Compressor Parts

FT. WAYNE, Ind.—Replacement parts for General Electric refrigeration compressors type CM6, CM8, CM10, and CM12 are available from the Apparatus Service Shop of General Electric Co. here, reports Dean H. Davis, Jr., manager.

"We are now supplying all parts needed and are also rebuilding these units in Ft. Wayne," Davis states.

Show Us--

(Continued from Page 1, Col. 3)

engineering talent.

The issue flared up recently when a G.A.O. report, issued at the end of the year, stated that "Use of consulting engineers results in additional costs to the states and the Federal government by reason of overhead and profit in the fees normally charged by such firms. Extensive use of some states of outside consulting engineers for the usual types of engineering work, which in other states is done by state-employed engineers, substantially and unnecessarily increases engineering costs and results in an avoidable inequity among the states in Federal participation in these costs."

Westcott in reply quotes from the U.S. government's Budget Bulletin 60-2, which says that "the Federal government will not start or carry on any commercial-industrial activity to provide a service or product for its own use if such product or service can be procured from private enterprise through ordinary business channels."

This Bureau of the Budget bulletin also requires that costs of such activities be "analyzed on a comparable basis," stating that "Costs assigned to Government operation must cover all direct and indirect outlays."

In support of his argument calling for full disclosures of true costs of government activities, Westcott points to a recent California state legislative investigation into its State Highway Department. Costs of engineering proved to be in excess of 25% of the cost of construction, and Westcott notes that "this is far from 4% usually received by consulting engineers."

Dallas Watchdogs--

(Continued from Page 1, Col. 5)

fall short in any respect, the details are mentioned.

Often as not, the shortcomings are of a relatively minor nature which may not interfere with the system's giving a satisfactory performance, but make the system sub-standard.

In one or two of the jobs reported on at a recent meeting of the Dallas group, for example, volume dampers had been omitted from branch ducts. Lack of canvas connectors in the ductwork was cited on another job.

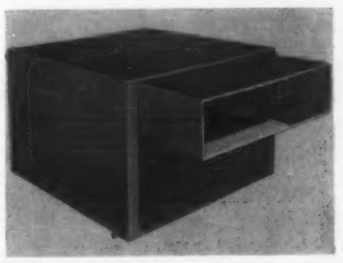
Membership of the three-man committee is changed each month.

This means that the committee member who inspects and criticizes a member competitor's job this month could be confronted with that competitor's inspecting one of his jobs.

This arrangement is calculated to keep each member of the association on his toes, and it seems to work out that way.

In addition to inspecting every month 10 jobs of members, which are selected at random, the "watchdog committee" is also authorized to make inspections of complaints to the secretary by other association members, reports of "questionable" jobs received from city building inspectors, and other jobs selected at random from city building permits.

In the "watchdog committee" program, the Dallas association judges installations against the association's own standards for safety and quality.



YORK MODEL HP 36 heat pump is designed to operate at temperatures from 0 to 115° F. It has twin cooling systems and step capacity electric heaters.

York Heat Pump--

(Continued from Page 1, Col. 5)

room "Conqueror" series each offer three models of heat pumps.

Five models will be available with auxiliary electric heat to provide additional warmth when temperatures drop into the lower ranges. These auxiliary electric heaters are entirely automatic, controlled by a thermostat. They are circular in design to provide full efficiency.

These models also feature automatic defrost. During the defrost period, the fan is automatically shut off to prevent cold air from entering the room.

On mild days, York heat pump units automatically switch from heating to cooling as needed to maintain the preset room temperature desired by the owner, it was pointed out.

New Refrigerant Receiver

A new and exclusive refrigerant receiver is an extremely important feature of these units, according to Rising.

"This receiver retains unneeded refrigerant when the units are operating on the heating cycle," it was explained. "Thus, these systems are automatically balanced to provide full heating efficiency and lower operating costs."

York engineers believe that this innovation will solve the heating problems that often occur in room units designed primarily for cooling duty.

Made In Three Groupings

For residential and commercial needs, York's Packaged Products Section offers heat pumps in three product groupings.

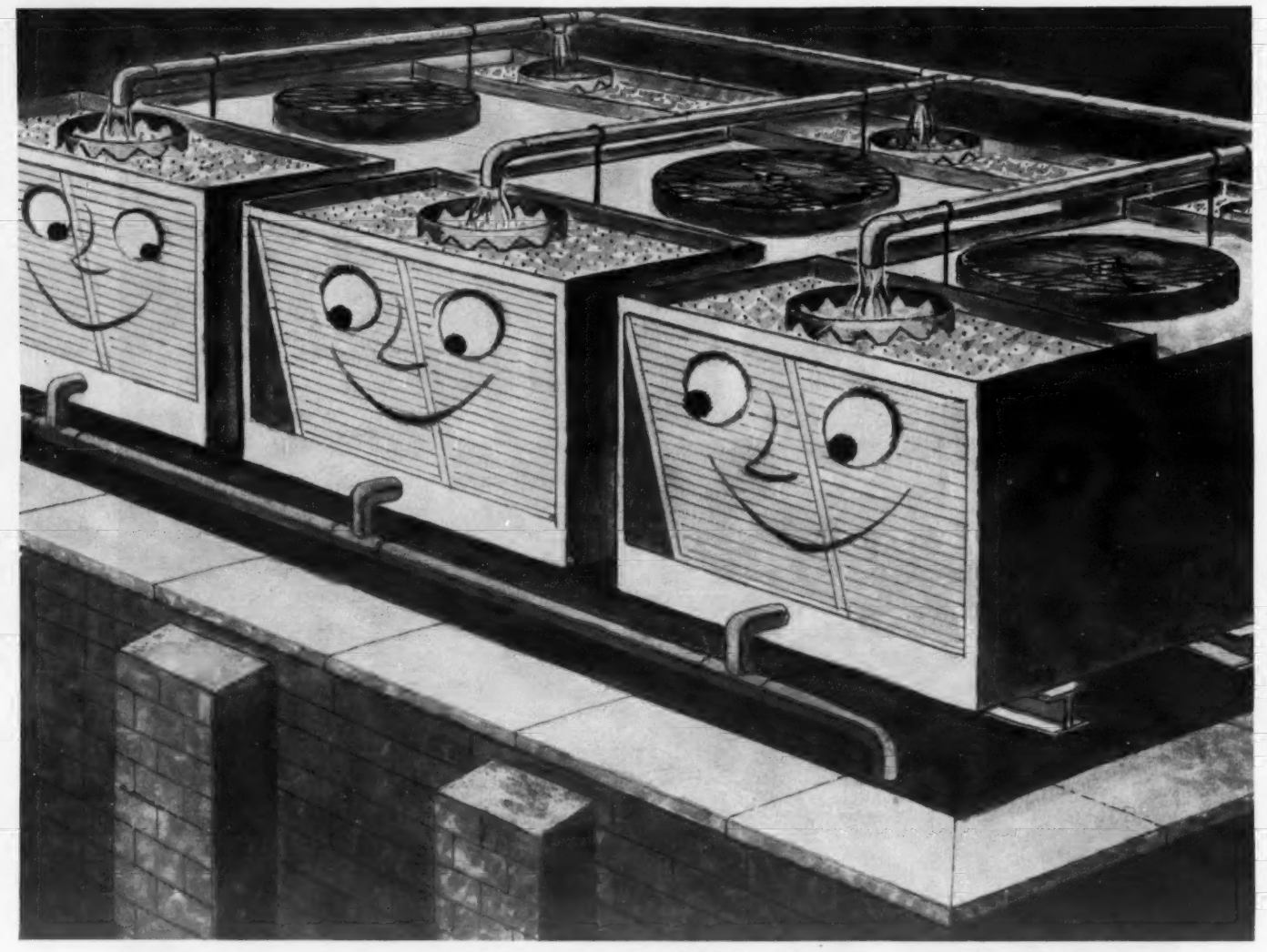
Air-cooled, attic-type York "Pathfinder" units, in 2, 3, and 4-ton sizes are available as heat pumps. When needed, auxiliary electric heaters will supplement the heat output. York's experience in 1959 indicates that this kind of installation is the fastest growing area of heat pump sales, it was stated.

York's model HP36 "provides heating even when temperatures are as low as zero, and cooling even when temperatures rise to 115°," York says. "Twin cooling systems offer step-capacity comfort and economy.

"Step capacity heating offers the same advantages. To supplement the compressors, step capacity electric heaters are built-in."

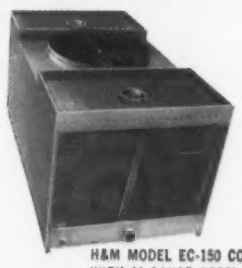
The company claims that its automatic electric defrost system on these models uses less power for defrosting. This model is entirely automatic.

Remote 5 and 7½-ton heat pumps will also be available as part of York's 1960 line.



How to cut costs on a 450-ton cooling job:

Use three Halstead & Mitchell 150-ton cooling towers!



H&M MODEL EC-150 COOLING TOWER WITH 10-GAUGE STEEL CABINET

Halstead & Mitchell

How can three units be cheaper than one? Simple. Halstead & Mitchell packaged cooling towers come to you completely assembled and therefore less expensive to install. They operate at lower cost because there can be no wasted capacity; with step-control, you get capacity as you need it.

Furthermore, with "modular" units, you can place each tower near the equipment it's to be used with. This gives you closer control of water temperatures—another economy factor. Then, too, if one tower must be shut down, you can continue to operate the others.

The advantages go on and on: lower silhouette, lower rigging costs, and utmost flexibility—towers can be easily moved or supplemented as requirements change. And, like all H&M towers, these carry the exclusive 20-Year Guarantee on the wetted deck against failure due to fungus attack or rotting.

Contact your Halstead & Mitchell distributor for complete information on H&M cooling towers in 3- to 150-ton capacities. Or write Halstead & Mitchell Co., Bessemer Bldg., Pittsburgh 22, Pa.

Cooling Towers • Water-Cooled Condensers • Air-Cooled Condensers • Finned Coil Products • Air-Handlers

First of 16

Custom-Designed Gold Medallion Home Completed

TAMPA, Fla.—Completion of what is said to be the nation's first custom-designed Total Electric Gold Medallion Home was announced here by Tampa Electric Co. and Westinghouse Electric Corp.

M. T. Anthony, Tampa Electric vice president in charge of sales, said the home is one of 16 such Total Electric Homes specially commissioned by Westinghouse to illustrate "a growing trend toward electrically heated homes."

The Tampa home, designed by Architect George Matsumoto, Raleigh, N. C., has a controlled environment on a year-round basis through the use of Westinghouse air conditioning and baseboard heating units.

Matsumoto has planned the rectangular home with a central living-dining space and all other rooms opening off of it for flexible use of areas, maximum ventilation, and full use of space, it was pointed out. The three bedrooms and L-shaped kitchen occupy the four corners of the home. Each of these adjoins one of the two compartmented bathrooms.

"Room air conditioners, built into the outside walls of the Total Electric Gold Medallion Home and integrated into the over-all design, will provide individual room temperature control," the announcement said. "Baseboard electric heating units will give the same kind of flexibility for comfort during cool weather.

"The home is designed for minimum losses of heat during the winter and minimum heat gains in the summer. The roof has a wide overhang for protection from the sun and weather."

Lennox Announces Literature Rack

COLUMBUS, Ohio — A new literature display rack has been announced by Janitrol Heating & Air Conditioning, a division of Midland-Ross Corp.

The rack, which holds a supply of nine product folders, is sturdily constructed from tempered pegboard with metal legs and includes a three-color header. The unit was designed for use in dealers' showrooms, shows, and model homes.

Admiral '59 Sales, Earnings Rise

CHICAGO — Higher 1959 sales and earnings for Admiral Corp. were reported by Ross D. Siragusa, president, following a meeting of the board of directors.

According to preliminary figures, consolidated sales were $199,000,000, a 17% increase over the $170,777,126 recorded in 1958. Earnings after taxes were approximately $1.70 per share, on 2,405,471 shares outstanding, compared with 57 cents per share earned in 1958.

New Duo-Therm Products Introduced To Sales Force at Factory Meeting

LANSING, Mich. — Motor Wheel Corp. announced the introduction of major new products, including a "Comfort Control System," at its national sales convention at the Albert Pick Motor motel, attended by some 40 sales representatives.

L. C. Vandertill, vice president-sales, Consumer Product Div., reviewed 1959 and presented the 1960 Duo-Therm home heater and furnace line.

Special sales emphasis will be placed on the 70,000 B.t.u. "Eight-Seventy" furnace with 2-ton air conditioning. This new Comfort Control System is designed to meet the needs of the rapidly expanding Florida market, it was stated.

"The unit, featuring the forced draft, 'Roto-Jet' burner, is extremely quiet and can be installed in the center of the center of the home," the company said. "The Eight-Seventy is ideal for slab floor homes, and can be used with attic, underfloor, or stub ducts through walls."

A new 55,000 B.t.u. "Windsor" oil home heater with forced draft burner also was shown.

"Designed to solve the problem of low draft chimneys, this heater needs only a minimum natural draft," according to the manufacturer. "A powerful fan creats sufficient draft for clean, efficient combustion during all stages of fire."

A 1½-ton, 18,000 Bt.u. capacity "High-Boy" air conditioner was introduced, too. Designed for space-saving installation, the unit is suited for mobile homes or permanent dwellings, the company said.

The "High-Boy" exhausts through floor or wall and "requires no expensive carpentry work."

W. L. Wood, sales promotion-advertising director, Motor Wheel, detailed the 1960 advertising and promotion program based on "Science in Home Heating" theme.

Following a banquet, the field force concluded the sales convention with a tour of the Duo-Therm manufacturing operations guided by Harry Beckley, general superintendent, Consumer Product Div.

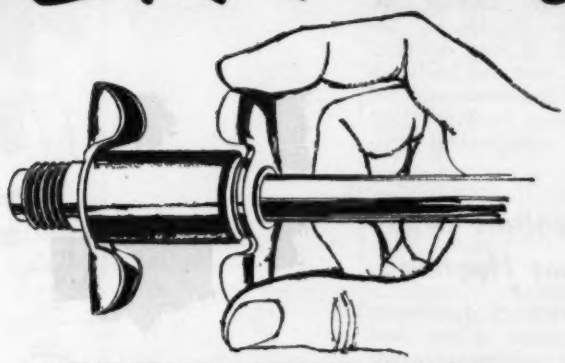
HARRY BECKLEY (l.), production manager, Motor Wheel Corp., explaining the sales features of the new Duo-Therm "Eight-Seventy" furnace to Fred L. Blank (center), Alabama-Tennessee sales representative; and Joseph H. Kennedy (r.), New England sales representative.

IMPERIAL REFRIGERATION SERVICE

IDEA CENTER

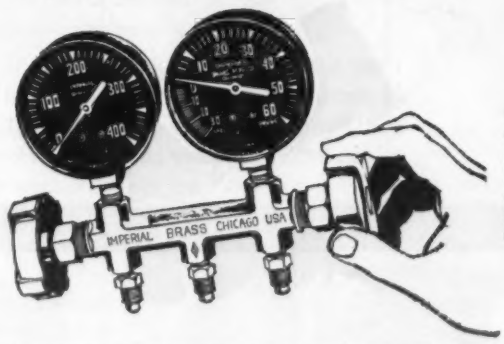
SAVE ON EXPENSIVE REFRIGERANT

Here's a can-piercing, reusable dispensing valve that lets you use only the amount of package refrigerant you need for a job *without losing the rest of the can.* And you save the valve, use it over and over. No. 330-C Tap-A-Can refrigerant dispensing valve — $1.45.



SHORTCUT FOR PURGING, CHARGING AND TESTING HERMETIC SYSTEMS

Slip this handy Imperial KWIK-CONNECT charging and testing port over the pinch-off tube of a hermetic unit, and tighten the wing-nut until the synthetic rubber seal grips the outside of the tube. Just as easy as that, you have a male flare connection to the system. No. 241-F KWIK-CONNECT; specify tube O.D. of 3/16, ¼, 5/16, ⅜ — $1.50 to $1.90, depending on size.

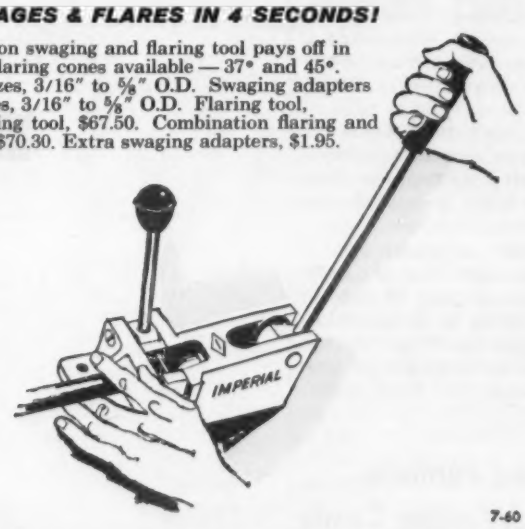


LIGHTER, STRONGER, EASIER TO HANDLE

No scraped knuckles on this double gauge charging and testing unit. Big hand grips, plenty of hand clearance. Light-weight, high-strength, forged brass body. Big, easy-to-read 2½" dials — pressure gauge to 400 lbs., compound gauge from 30" vacuum to 150 lbs.; handles higher pressures of Freon 22. No. 356-C.....$8.55

MAKE SWAGES & FLARES IN 4 SECONDS!

This production swaging and flaring tool pays off in time saved. Flaring cones available — 37° and 45°. Flares in 6 sizes, 3/16" to ⅝" O.D. Swaging adapters come in 6 sizes, 3/16" to ⅝" O.D. Flaring tool, $62.50. Swaging tool, $67.50. Combination flaring and swaging tool, $70.30. Extra swaging adapters, $1.95.



WIN!

$5.00 CASH AWARD

Send us your ideas, tips, short-cuts using Imperial refrigeration products — anything that makes your job easier. Every idea we use wins $5.

IMPERIAL

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6300 West Howard Street, Dept. ACR-30, Chicago 48, Ill.

Gentlemen:
Send me additional information on the following products:

☐ Charging and Testing Unit
☐ Tap-A-Can Dispensing Valve
☐ Kwik-Connect Charging and Testing Port
☐ Production Swaging and Flaring Tool

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In New York

Assembly O.K.'s Tax Break To Spur Heat In Tenements

ALBANY, N. Y.—One of a series of anti-slum measures submitted by the Wagner administration, a bill which would grant tax relief to landlords who install central heating in tenements and so-called single-occupancy dwellings in New York City has been approved by the Assembly and sent to the Senate.

Under the bill, a landlord would be exempted for 12 years from paying property taxes on the cost of the central heating system. Also, the improvement would not be added to the annual assessed valuation of the building.

The tax exemption for single-occupancy dwellings is limited in certain respects in line with the city's drive to eliminate such dwellings altogether in the next five years.

The bill would also provide certain tax abatement.

Assemblyman Samuel A. Spiegel, who introduced the measure, said it was designed to encourage and aid landlords of the 15,000 tenements and 750 single-occupancy dwellings that still did not have central heating.

N. J. Realtors Urge Tenement Heating

JERSEY CITY, N. J.—Joseph Plonski, president of the Real Estate Board here, recently outlined a program that would require landlords to install central heating or gas riser pipes in their tenements within two years.

Plonski's program to outlaw the kerosene stoves used to heat most of the city's cold water tenements would require cooperation of the landlords, he said, who must "scotch this kerosene menace themselves if for no other reason than to protect their own property investment."

Jersey City's 1959 death toll of nine lives, scores of injuries, and property destruction from kerosene fires prompted the president's call for action.

"It would be economical as well as humane for landlords owning tenements of 16 units or larger to bring in central heating," Plonski declared. "It pays for itself over a period of time and increases the value of the property."

Oil-Fired Furnace Warms Windsor Castle

LONDON, England—A recent announcement to the House of Commons was a harsh blow to the Englishmen who have been stoutly resisting central heating for many years, blaming it for causing everything from chilblains to chapped hands.

The announcement was that modern central oil-fired furnaces will replace coal heating in Windsor Castle, one of Queen Elizabeth's royal palaces.

Institute Issues First Bulletin On Proper Installation of Gas Vents

CHICAGO — The first in a series of bulletins dealing with "safe, modern methods of gas vent installation" has been produced by the Gas Vent Institute, and released to local code officials and utility company executives across the country, the institute announced.

"Discussing the simplified theory of gas venting and the basic principles of double wall gas vent operation, the initial GVI bulletin sets the stage for future releases covering recommended gas vent installation practices and other subjects relating to a better understanding of proper gas venting.

"The series of bulletins entitled 'Proper Gas Venting' are published and distributed as a public service by the Gas Vent Institute, national industry trade group formed to provide authoritative information on gas vent installation."

GVI executive director, William E. Smith, stated that in recent years, the use of gas as a heating fuel "has experienced a tremendous increase." This increase has demonstrated, in a great many cases, the need for improved gas venting codes which take into consideration the advances which have been made in gas vent design.

Those wishing assistance with any gas venting problem, it was stated, may write to the Information Center of the Gas Vent Institute, 332 S. Michigan Ave., Chicago 4, Ill.

Under New Safety Code

Ontario To Examine Installers, Servicers of Oil, Gas Appliances

TORONTO, Ont., Can.—Persons engaged in the installation and service of gas or oil appliances soon will have to pass an examination in the interests of public safety, Energy Minister Macaulay said.

He told the legislature's standing committee on energy a training branch is being organized to implement the new program.

Nearly 3,500 heating contractors were licensed last year. New licenses are to be granted according to provisions of Ontario's new safety code which became law last month.

Ontario also leads in heating safety by providing a manual for government inspectors and refresher courses to better qualify inspectors, Macauley said.

Another safety plan already under way is an emergency program subscribed to by all natural gas companies in which the firms have agreed to use other companies' gas and equipment in the event of a line break, said A. R. Crozier, who is chairman of the Ontario fuel board.

A standard heating by-law is being drafted by the government so local municipal by-laws will not come in conflict with Ontario's safety code, Crozier said.

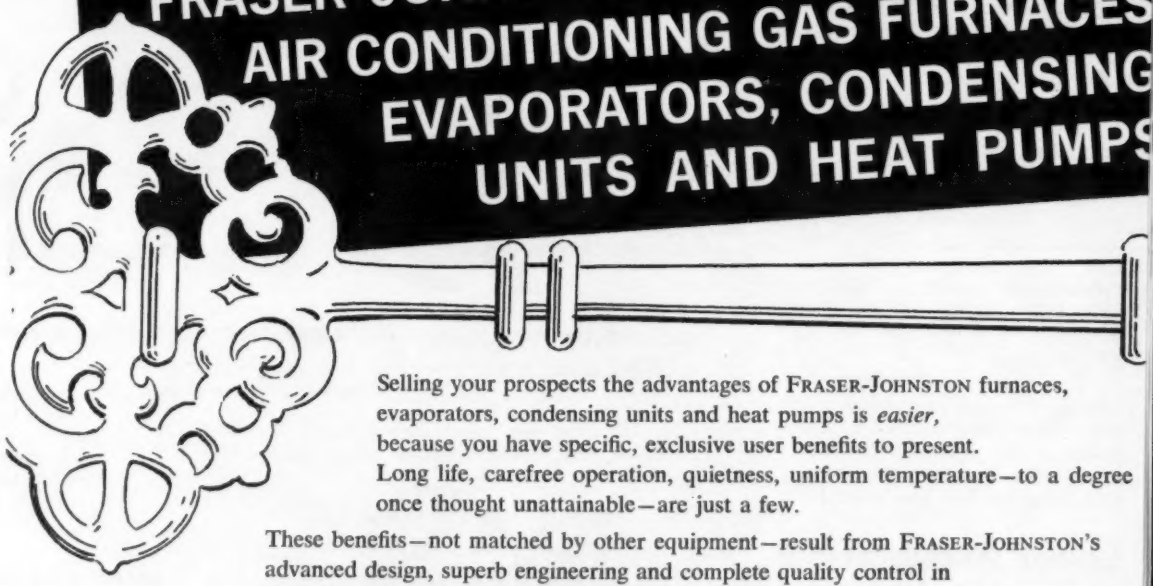
The Key to Greater Profits...

FRASER-JOHNSTON 1960 VALUE LINE

AIR CONDITIONING GAS FURNACES

EVAPORATORS, CONDENSING

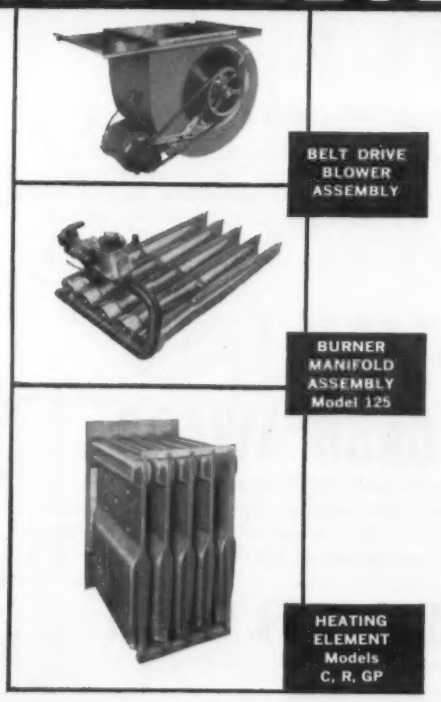
UNITS AND HEAT PUMPS



Selling your prospects the advantages of FRASER-JOHNSTON furnaces, evaporators, condensing units and heat pumps is *easier,* because you have specific, exclusive user benefits to present. Long life, carefree operation, quietness, uniform temperature—to a degree once thought unattainable—are just a few.

These benefits—not matched by other equipment—result from FRASER-JOHNSTON's advanced design, superb engineering and complete quality control in manufacture. *Compare*—detail for detail—and you'll agree that FRASER-JOHNSTON equipment is "the value line of the air conditioning industry."

THE VALUE LINE OF THE



Start with the basic elements—the blower, the burners and the heat exchanger—the heart of a furnace. Then evaluate the casing, evaporators and condensing units... every sales point. You'll see we've made QUALITY mean something!

1. Large, 13⅛" diameter blowers in all models, rubber mounted, give more air handling capacity at low tip speed—the secret of quiet operation. All FRASER-JOHNSTON belt driven furnaces carry 0.6 in. AGA high static approval.

2. Patented, silent, lint-free, multi-slotted burners.

3. Updraft heat exchanger, streamlined with no hot spots, no pockets for condensation. Die-formed, completely welded construction.

4. Fiberglass and foil lined casing for cool, quiet efficiency. Completely assembled and wired at factory. All service from the front. Slideout blowers.

5. Adjustable fan and limit controls for better performance under various conditions.

6. Inexpensive, removable filters catch dirt, pollen and germs.

7. Safe—AGA approved.

Gas-Fired Boilers, Conversion Burners Up; Furnace Shipments Down In Jan.

NEW YORK CITY — While manufacturers' January shipments of residential gas-fired boilers and conversion burners showed strong gains, sales of gas furnaces declined from the year-ago level, the Gas Appliance Manufacturers Association reports.

The monthly telegraphic survey conducted by Edward R. Martin, GAMA director of marketing and statistics, placed boiler shipments for the month at 6,608 units, up 9.1% from the 6,057 boilers sent to market in January of last year.

Sales of conversion burners were up 6%, from 6,700 units dispatched in January, 1959 to 7,100 sold last month.

Gas furnace shipments for the month slipped 5.7%, from 63,400 recorded in January of last year to 59,800.

Combined shipments of the three types totaled 73,508 units, a drop of 3.5% from last year's January figure, 76,157.

Shipments of other gas heating equipment for the month were as follows:

Vented recessed wall heaters, 26,400, a 13.2% drop from 30,400 units reported in the first month of 1959.

Room heaters and other types of gas direct heating equipment, 43,200, down 18% from last year's 52,700.

Gas floor furnaces, 3,000, a 50% drop from the previous January's 6,000 unit sales.

Gas unit heaters and duct furnaces, used in commercial and industrial installations, showed a 5.8% improvement. Last month's sales totaled 12,800 units, compared to the year-ago level, 12,100.

Green Bay Dealers Get Silver Shield Story

GREEN BAY, Wis.—A presentation of the Silver Shield program of the National Warm Air Heating & Air Conditioning Association was made here Wednesday evening, March 9.

Attending were warm air heating dealer-contractors from the tri-county area of Brown, Outagamie, and Manitowoc.

The presentation was made at the auditorium of the Wisconsin Public Service Co. Arrangements for the meeting were made in cooperation with a local committee headed by Francis W. Kerscher of Metal Service Co.

2 Rooms Per Person Coming

GAMA Official Says Industry Ready To Handle Larger Houses at Same Cost

NEW YORK CITY — American homes will provide two rooms per person before the end of the 1960's, whereas it took almost half a century for the average U. S. household to grow from one to one-and-a-half rooms per person.

This prediction by housing experts of the Gas Appliance Manufacturers Association was made following a study of house heating and air conditioning requirements of average homes of the future.

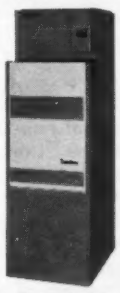
"Applied to all of the nation's housing," said Harold Massey, GAMA managing director, "this two-rooms-per-person formula will call upon heating and cooling equipment to comfortize 33% more space in the average home of 1969 than is now the case."

Gas heating engineers, Massey said, are preparing to meet this requirement without increasing the size of furnaces or boilers or their cost.

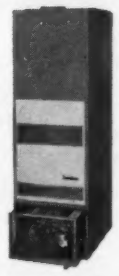
In fact, he said, the industry already has proved to the satisfaction of mass construction people and individual home builders that "today's compact gas equipment can heat more space than the much bulkier central heating equipment produced even five years ago."

FRASER-JOHNSTON UPFLOW, DOWNFLOW AND HORIZONTAL FURNACES WITH ADDED EVAPORATORS & CONDENSING UNITS

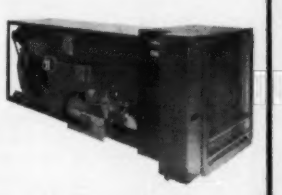
FRASER-JOHNSTON makes the finest cooling and dehumidifying coils in the industry designed especially for home air conditioning systems. Advanced design eliminates humidity build-up on the off cycle. All moisture removed from the air is immediately drained from air stream. Engineered for simple installation at lowest labor cost.



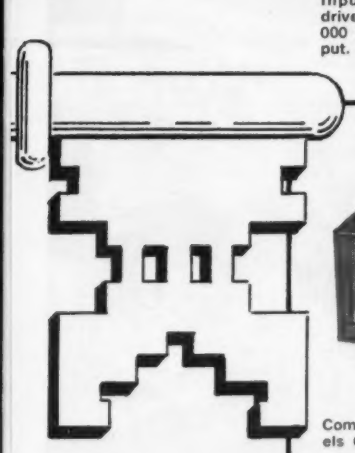
MODEL C (belt drive) and evaporator for limited space installation — ten sizes from 80,000 to 250,000 BTU/Hr. Input. MODEL CD (direct drive) — eight sizes from 65,000 to 125,000 BTU/Hr. Input.



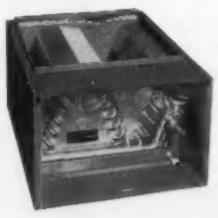
MODEL R (belt drive) furnace and evaporator for counterflow or perimeter systems — ten sizes from 80,000 to 250,000 BTU/Hr. Input. MODEL RD (direct drive) — eight sizes from 65,000 to 125,000 BTU/Hr. Input.



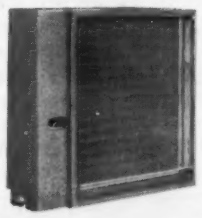
MODEL HN (belt drive) furnace and evaporator for horizontal application — four horizontal sizes available from 80,000 to 150,000 BTU/Hr. Input. MODEL HND (direct drive) — four sizes from 70,000 to 100,000 BTU/Hr. Input.



C SERIES
Companion to furnace Models C — sizes 80 to 250.



R SERIES
Companion to furnace Model R — sizes 80 to 250.



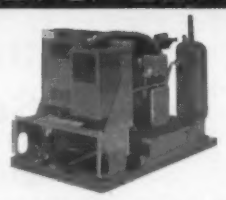
H SERIES
Companion to furnace Model HN — sizes 80 to 150.

A.R.I. rated when used with the proper Fraser-Johnston condensing unit.

AIR CONDITIONING INDUSTRY

The MODEL F SERIES, in 2, 3, 3½, 4, 5, 7½, 10 and 15 h.p., uses the popular vertical discharge propeller type fan for cooling the condenser.

MODEL A SERIES, with metal weatherproof enclosure (as shown), in 1, 2, 3, 4, 5 h.p., uses an extra large, extremely quiet centrifugal fan.

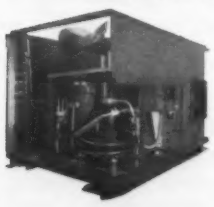


The MODEL W SERIES, in 2, 3, 4 and 5 h.p., shown unenclosed, uses water cooling for condenser and is not affected by extreme air temperature conditions.

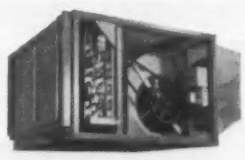
CONDENSING UNITS

FRASER & JOHNSTON offers both air-cooled and water-cooled Condensing Units, U.L. approved. Air-cooled units are available with propeller type fan and with centrifugal type fan. These modern Condensing Units will operate under extreme temperature conditions, when properly applied and installed.

A.R.I. rated when used with the proper Fraser-Johnston evaporator.



HEAT PUMPS (reverse cycle) AND AIR CONDITIONING UNITS
Self Contained and Remote.
Designed for high ambient temperatures.
Use F Series vertical type propeller fan and horizontal discharge from a centrifugal blower to the conditioned area. Sizes 3, 4, 5, 7½, 10, 15 nominal tons. (Photo) 1. Heat pump. 2. Air handling unit.



MODEL HB

Fraser-Johnston

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OVER A QUARTER CENTURY OF LEADERSHIP

Connor Engineering Names J. A. Gray Gen. Sales Manager

DANBURY, Conn.—James A. Gray has been named general sales manager of Connor Engineering Corp., Connor Vice President and General Manager Frank Canavan announced recently.

J. A. Gray

Gray will supervise and direct the sale of Connor's three product lines, the high velocity valve attenuators, "Kno-Draft" air diffusers, and "Dorex" air purification equipment.

Before joining Connor, he had been with the Worthington Corp. for ten years, serving in Baltimore, Cleveland, and, most recently, in Holyoke (Mass.), as a sales manager.

Wagner Electric Dollar Volume Hits All-Time High

ST. LOUIS—Dollar volume of sales of Wagner Electric Corp. in 1959 reached an all-time high of $111,373,268, an increase of 31% compared to 1958 and 10.6% higher than the previous record year of 1956, George W. Brown, president, reported.

Net earnings amounted to $6,546,891 against $4,167,098 in 1958.

Brown said working capital increased from $33,079,220 at the start of the year to $35,069,944. Net worth increased $3,663,078 to $58,537,440.

"A well-integrated, planned expansion program has been in preparation for many months, with regard to our plant facilities, in order to meet our requirements resulting from continuing growth and diversification," Brown also reported.

"The first step will be to manufacture fractional horsepower motors in a newly-constructed modern leased facility in Brinkley, Ark. This will put us in a better competitive position in this product line and, in addition, will make space available at the Plymouth Avenue plant.

Los Angeles Subcontractors' Institute Described as '5 Years Ahead' of Times

LOS ANGELES—"Five years ahead of the rest of the country" is the statement of an official of one of the leading national associations in the plumbing industry, in referring to the subcontractors' institute presented by Los Angeles State college. The seventh such institute begins with the spring semester and courses meet in the evening from 7 to 10 o'clock in the State building at Los Angeles Civic Center.

Course No. 1 on business management for subcontractors on Wednesday evening helps the subcontractor understand and avoid unnecessary risks.

Course No. 2, continuation of business management No. 1, also on Wednesday evening, is for those who want a closer look at the "money" problems of their business. It emphasizes cost, pricing, and profit aspects.

Course No. 3 on plumbing estimating Thursday evening, emphasizes commercial and industrial work for master plumbers and experienced journeymen.

One of the contractors who have taken the courses Howard M. Quick of Quick Plumbing Co., Ojai, had this comment: "Many of my past losses and sad experiences businesswise would have been eliminated had I been able to have had this type of training sooner."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

24 PACE-SETTING NEW D-H HIGH PRESSURE H.C.D. AIR HANDLERS DO IT ...AT NEW KROGER BLDG., CINCINNATI.

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W. R. MOORE

J. S. LOCKE

Minneapolis-Honeywell Elects Locke, Moore to Vice Presidencies

MINNEAPOLIS — James S. Locke and Wesley R. Moore have been elected vice presidents of Minneapolis-Honeywell Regulator Co.

Locke also has been named vice president and general manager of the company's Brown Instruments Div. in Philadelphia. He previously was vice president and general manager of the firm's Micro Switch Div. at Freeport, Ill.

Moore is assistant to the president. He and Locke have held a variety of sales and administrative posts during long careers with Honeywell, President Paul B. Wishart said in his announcement of the promotions.

Over 300 Attend RACCA of N. J. Installation Dinner

SUMMIT, N. J. — Over 300 persons attended the 12th annual installation dinner of the Refrigeration & Air Conditioning Contractors Association of New Jersey, Inc.

The event was staged at the Military Park hotel in Newark.

Feature of the evening was the installation of the new state officers by Anthony G. Dietl, a member of RACCA's board of directors. Those installed were Saul Marder, president (re-elected for a second year); Ray L. Eggert, Jr., vice president; Chester J. Karas, secretary-treasurer; William J. Capo, sergeant-at-arms; J. Lloyd Handy, executive secretary; and Edgar A. Donohue, legal counsel.

The following directors were also installed: Ingvar Monsen, Edward Kessler, John S. Sanok, William J. Capo, Daniel De Sesa, Erwin Geiger, Charles Edmond, Anthony J. Dietl, and James M. Naughton.

Cleveland RSES Elects Paul Wadsworth Pres.

CLEVELAND — Paul Wadsworth was elected president of the Cleveland Chapter of Refrigeration Service Engineers Society at the group's regular monthly meeting held in February.

Other new officers include Vic Coe, first vice president; George Thomas, second vice president; Robert Schneider, secretary; Ed Kopneske, treasurer; Harold Ross, sergeant-at-arms; Anton Constantin, educational chairman; Julius Colasent, state delegate; Al Owens, alternate delegate.

Brochure States Case for Separating Mechanical Bids from Rest of Contracts

WASHINGTON, D. C. — The National Association of Plumbing Contractors' case for complete separate of mechanical bids from the remainder of construction contracts on both public and private works is stated in a 20-page brochure published by the association.

Prepared by NAPC's Technical Dept., the brochure is aimed at convincing architects, engineers, school boards, and other building owners that it is more economical to separate the mechanical sections of a construction contract in order to have these sections bid upon by competent mechanical contractors.

NAPC said the sections indicated for separation are those traditionally listed as mechanical — plumbing, heating, ventilating, electrical, air conditioning, refrigeration.

BIDS COMPARED

"A high point of the book," NAPC noted, "is a full-page chart of some dozen actual construction projects where the bids were taken two ways—on a single contract basis and on a separate contract basis. The costs to the owners were lower on the separate mechanical contract basis by an average of 7½%."

The booklet lists benefits which the owner is said to obtain, such as exclusive choice of contractors, better cost analysis, firmer control, lower costs, tighter responsibility, and better advice and service.

ADVANTAGES LISTED

Listed advantages of the separate mechanical contract system to architects and engineers include fewer job headaches, competent advice on plans and specifications, and smooth work procedure.

The brochure says the general contractor can benefit by being relieved of the harassment and inconvenience of incompetent mechanical subcontractors on the job.

Final pages of the brochure are devoted to quotations from legal opinions and from large industry ownership spokesmen.

Initial distribution of the booklet by NAPC includes a mailing to all registered architects, all members of the Consulting Engineers Council, state and Federal purchasing agencies, all members of Congress, and other mechanical contracting organizations.

Single copies will be furnished to every NAPC member, and additional copies may be purchased for 15 cents.

there's **Service** behind the Handy & Harman label!

Immediate service from a national network of Sales Offices and Distributors — ready, willing and very able to supply you with the very finest in silver brazing alloys, SIL-FOS and EASY-FLO.

In addition, there's plenty of "pay-off" knowledge and experience available from the same source: brazing production methods and techniques; technical and metallurgical assistance — it's the one big package to meet your every silver brazing requirement.

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Bell & Gossett Reports 1959 as Best In 44-Year History, Sees Better 1960

MORTON GROVE, Ill.—Bell & Gossett Co. reported that the fiscal year ended Nov. 30, 1959, was the best year in the history of the 44-year-old firm.

In the annual report mailed to shareholders, R. E. Moore, president, said that both sales and earnings established new all-time records for the company, which manufactures hot water heating products, air conditioning equipment, and electronics devices.

Net income, after taxes, for the period totalled $2,040,331, and was equivalent to $1.30 per share on the 1,572,944 shares of common stock outstanding. This compares with the net income of $1,708,642, or $1.09 per share a year ago.

Net sales rose to a record $29,739,589, a 12% increase over sales of $26,357,790 reported for fiscal 1958.

In reporting on the financial condition of the company, the annual statement pointed out that current assets rose from $12,240,547 to $13,255,947 and current liabilities declined from $2,896,389, at the end of November, 1958, to $2,692,570, at the close of fiscal 1959. Net working capital rose to $10,563,377, an increase of $1,219,210.

The annual report also stated that the Marlow Pump Div., Midland Park, N. J., reported record sales and earnings "despite its highly competitive field."

Dualex, a part of the company's electronics division, also showed a satisfactory profit, and the report told shareholders that great stimulus will be given to the company's electronics line in future months with the recent acquisition of Colorado Research Corp., developer of electronics devices.

Moore said the company's research program is also continuing its development of new items for heating and air conditioning, and that the company is adding approximately 35,000 sq. ft. to its Morton Grove plant to accommodate expanding operations.

He predicted even further sales increases during the 1960 fiscal year.

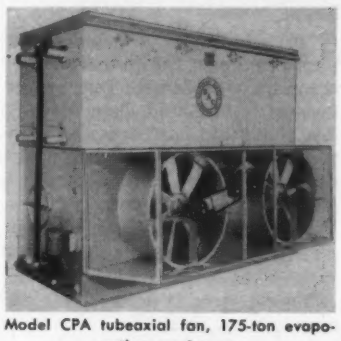
BAC Offers Large Tonnage Factory-Assembled Equipment

Evaporative Condensers, Cooling Towers Up to 700 Tons Available

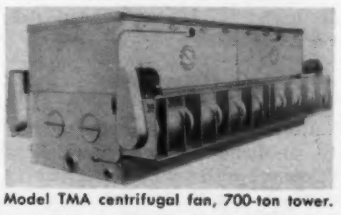
BALTIMORE — Evaporative condensers and cooling towers, manufactured by Baltimore Aircoil Co., Inc. are now available up to 700 tons in single, factory-assembled units.

The company claims this is the first time that factory-assembled units of this large size have been offered as a standard line.

"Three models of both cooling towers and evaporative condensers are offered to cover every refrigeration and air conditioning application," it was stated. "Blow-thru and draw-thru units with slow-speed, quiet-operating centrifugal fans are available as well as blow-thru models that are equipped with highly efficient tubeaxial fans."



Model CPA tubeaxial fan, 175-ton evaporative condenser.



Model TMA centrifugal fan, 700-ton tower.

Suitable for either indoor or outdoor installation, blow-thru models up to 100 tons are also said to be the first units offered with connection flanges for ductwork on the air inlets as well as outlets.

All units are constructed entirely of heavy-gauge steel, hot-dip galvanized, and all surfaces inside and out are further protected from corrosion by a coat of B.A.C.'s zinc-chromatized aluminum finish, according to the company.

Units up to 100 tons are now available from stock while larger sizes are now available on the regular production cycle, according to the company.

H. C. Elsken Heads Mathes Warranty, Service Program

MARBLE FALLS, Texas — The Mathes Co., division of Glen Alden Corp., announced that Harold C. Elsken was recently promoted to head of the newly-organized warranty and service program with the newly-designated title of coordinator of that department.

He has assumed his new duties at the manufacturer's recently consolidated general headquarters and plant here.

Elsken will have full responsibility for supervision of Mathes' warranty program to include coordination of parts, warranty, and service policies directly with Mathes distributors and dealers. In addition, he will supervise Mathes' enlarged, new parts department.

In the latter field he will be assisted by Nelson S. Rowe, recently appointed parts department manager.

Elsken was appointed supervisor of quality control at The Mathes Co. in Fort Worth in November, 1958.

Rowe will perform additional duties as customer engineering advisor, assisting Mathes distributors and dealers on problems of application, installation, and service trouble-shooting.

After three years' experience as a sales engineer with two major air conditioning manufacturers, Rowe joined Mathes in July, 1958.

Chevy's precision-balanced wheels run smoother. Balancing weight shows that all front wheels are balanced in assembly—an advantage no other truck offers. It's assurance of easy handling; that tires will last longer without shimmy and shake from wheel imbalance.

Chevy's major components for 1960 last up to four times longer than ordinary truck parts—exhaustive testing has proved it. Likewise, the totally new cabs have proved 67% more resistant to twisting; and new frames for many models are as much as eleven times stronger in torsional rigidity. These are typical 1960 Chevrolet truck facts and figures—and they point up a new kind of tough truck build that helps you hang on to your dollars!

Chevy's new frames are built with new brawn. Box-section rail design is stronger than ever; rail section modulus has been increased as much as 33%. And massive front box-section crossmember adds to truck stamina; helps keep you going years longer at least expense.

Chevy's new torsion-bar independent front suspension saves maintenance, increases work output. Independently suspended front wheels step right over bumps; tough torsion bar springs soak up shocks. As much as 78% of all objectionable road shock is absorbed before it reaches truck body, sheet metal or driver!

Chevy's easier riding rear springs help roll up profits. Frictionless coil springs cushion road shocks before they reach the frame. Spring capacity can be matched to the load for best riding qualities.

CHEVROLET'S BIG NEW BUILD IS LIKE MONEY IN THE BANK FOR YOU!

Here are just a few of the *many* ways in which Chevrolet's totally new build for '60 will work to build a bigger bank account for you. They show that a '60 Chevy means *profit* through longer life, less maintenance, easier working, outsized cargoes and extra economy! You'll find, too, that 1960's savingest truck *power* is Chevrolet's: famous economy 6's and efficient short-stroke V8's for light-duty models . . . high-power, high-torque V8's and tough, dependable 6's for the bigger trucks. It'll profit you to see your Chevrolet dealer about Chevy's big new build, sometime soon. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

1960 CHEVROLET STURDI-BILT TRUCKS CHEVROLET

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)

ly, Anthony De Lorenzo recently told the Detroit Adcraft Club. (Old friend "Tony" is Vice President in Charge of Public Relations for General Motors Corp.

"A few years ago, our top image merchants could run a Bluebeard type through our conversion department and turn out a very acceptable, lovable facsimile of Charlie Weaver. Now we seem to be losing our sinister influence," he clevered.

"We created that paragon of virtue, that knight in shining armor, that man of infinite knowledge and sense—the fearless, all-wise industrial statesman who is incapable of error and whose purity would shame Sir Galahad and even Ivory Soap.

"Faced with a choice of phony images, the public understandably preferred the weaknesses, foibles and even vices—described by businessmen's detractors—to the self-righteousness offered by his supporters," De Lorenzo concluded.

It might be footnoted, at this point, that Campbell-Ewald's personable president, Tom Adams, currently is delivering a new speech entitled:

"Would You Want Your Daughter To Marry An Advertising Man?"

They'll Smell Better Now

Comrade Khrushchev recently published a book, entitled: *"Toward a Healthy Life."* It is concerned with etiquet.

Translators report that the first principle stated in this tome is: "Bathe once a week (and between baths, wash your feet before going to bed)."

Comrades who aren't quite sure how to act at a dance are advised: "It is usual for men to ask women to dance."

If a Russian citizen is entertained in a friend's home, say for dinner, these are some things he should keep in mind:

"Take off your galoshes."

"Cool your soup by stirring it; do not blow."

"Do not put out your cigaret on chairs."

Obviously, Communist Russia is becoming more socially conscious, which is good.

In Stalin's oppressive era a Soviet housewife wouldn't have given a ding if a guest stubbed out a cigaret on an old, broken-down chair.

But now that she's able to buy a new chair, she's not going to be any happier over cigaret burns than her American counterpart is.

Perhaps good manners go hand in hand with private ownership. Sensibly, they protect personal property.

Communism may be in the process of revolutionizing itself.

Stories of the Week

Joe Suburbia mortgaged his house to buy a new car. Then he tried to borrow money on the auto so he could erect a garage for it.

"If I make this loan," probed the banker, "how will you be able to afford gas for the car on your budget?"

"It seems to me," Joe stood tall, "that a fellow who owns his own house, car, and garage, should be able to get credit for gasoline."

Widow of Johan Strauss invited Brahms to inscribe his name in her "memory book."

With a flourish, Brahms jotted down the first four bars of *Blue Danube Waltz,* and added:

"Unfortunately, not written by Johannes Brahms."

Sign on the back of a Detroit electrical contractor's trucks (spotted by Jack Sweet):

"You call us — We'll wire you."

Humor is the lubricant of zestful living. Humor is the margin of safety, the tension allowance, the mirror of perspective for taking one's self not over-seriously but taking one's life task dutifully.—Prof. HERMAN J. PETERS, *Ohio State University.*

Out of Our Mailbag

521 Glen Echo Rd.
Philadelphia, Pa.

Editor:

After reading your "Inside Dope" reference to your dog, I felt you might like to hear additional evidence of "Man's Best Friend."

If you have missed any of Tom McCahill's articles in *Mechanics Illustrated* on his Labrador Retrievers, do look them up, for they are superb.

CHARLES R. LOGAN

Remington Corp.
Auburn, N. Y.

Editor:

A recent "Dope" column reminds me that a few years ago, while taking my son Bill to visit New England prep schools, I stopped at M.I.T. and found a classroom where Professor Norbert Wiener was engaged in informal discussion with four or five students.

When he gave me the nod I said: "Dr. Wiener, where were you on the morning of August 1, 1914?" First, tilting his head back in thought, he said "Goettingen." Then he said "No, not Goettingen. I was on the S.S. Cleveland traveling from Southampton to Boston."

Then he looked at me again and said, "Yes, and you were there, too." That day marked the start of World War I!

At the tender age of 17 Dr. Wiener had already obtained his Ph. D. from the University of Goettingen. Previously he had graduated from Harvard and had obtained his Master's Degree there.

All of this had happened, "Dear Dope," before you were even circumnavigating a Kiddie Koop.

Wiener and I had both finished a year of education in Germany—although mine was at a much lower level—one semester at the Volkschule and one semester at Ober Realschule.

In one year in Germany I learned much more and learned it much better than any two years of school in this country, irrespective of the level.

Aside from faculties that are better qualified in Europe than here, there are three reasons why the European student learns more and learns it better than does the average American student. They are: Work, *Work,* and WORK!

HERBERT L. LAUBE,
President

Climatic Air...1960 Models & Units for all cars and trucks!

Nationally advertised, prominently promoted, custom-designed for customer-service . . . dealer profits . . . lasting satisfaction . . . that's CLIMATIC AIR auto air conditioner for '60. Made and sold by a company with 28 years experience serving automotive dealers and car owners . . . CLIMATIC AIR is the unit for dealers who plan to SELL and INSTALL profit-building auto air conditioners from now on. Don't sell a "dog" — sell comfort and satisfaction! For full details on distributorships and dealerships . . . write:

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REFRIGERATED
AUTO & TRUCK AIR CONDITIONING

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FEATURED OVER TRUTH OR CONSEQUENCES, NBC-TV, DURING YOUR SELLING SEASON!

Contractors Offered Ice Storage System For Air Conditioning of Churches, etc.

DALLAS — After more than 15 years of experience in designing and installing "latent" (ice) storage systems for the air conditioning of churches and buildings of similar occupancy, Texas Refrigeration and Engineering Co. here is now offering its equipment to qualified local contractors.

The firm has considerably more than 100 such installations to its credit, according to F. M. Angus, president.

Small Unit Operates Almost Continually

Basic principle of the "Treco" system, he explains, is to operate a relatively small refrigeration system almost continually, building up an ice bank in a water tank. During the short and intermittent demand for air conditioning, as during church services, the ice is quickly melted, thus providing greatly increased cooling capacity for the short time it's needed.

Such a system obviously involves the use of chilled water, and usually a hot water boiler is incorporated to provide winter heating through the same convectors employed for cooling.

While the basic principle is simple, a latent heat storage system must be carefully designed and installed, emphasizes Angus. In offering the system for installation by other contractors, the company explains to architects-engineers that it will continue to handle the engineering involved.

Major advantages of the latent storage principle, according to Angus, are the very considerable savings in both first and operating costs over a conventional air conditioning system sized to meet the instantaneous load.

Power Companies Like It

"The power companies love it," he also says, because it provides them a much better load factor. A small system operating most of the time obviously presents fewer problems to the utility than a large system used only occasionally.

Although many of the firm's installations have brought cooling to churches for the first time, some of them have involved converting existing conventional equipment to latent storage systems, thus greatly increasing cooling capacity at little extra cost, both first and operating.

One of the most dramatic such examples was the system worked out for the Hillcrest Baptist church in Dallas, according to Angus.

The "plant," as it were, of this church consists of a large auditorium which is flanked on both sides by two large three-story buildings used for educational purposes primarily, or five large buildings in all.

Several years ago air conditioning had been provided for the auditorium only through the installation of two 25-ton package units, but church officials wanted to air condition the four other buildings also.

System devised and installed by Angus involved a large latent storage tank located between the two package units plus piping, pumps, and air-handling units for the five buildings. Compressors of the two 25-ton package units were hooked up to the ice storage tank coils, but no change was made in either the electrical service to the compressors or the condenser side of these units.

Instead of 50 tons' capacity, the system now had 230 tons—for the relatively few hours a week when cooling was needed.

Just as dramatic was the slash in operating costs from $7.40 per ton per month for the 50-ton system to $2.04 per ton per month for the 230-ton set-up, according to Angus.

The complete figures for the month of August with the 50-ton system show a total power cost (for all purposes) of $370.25, and the load factor was 5.

A year later with the 230-ton latent storage system in operation, the total power costs for August amounted to $469, and the load factor was 19.

Obviously, as Angus would be the first to point out, the latent storage system thus far has been practical only in applications where the cooling load is high but intermittent in demand. Churches, auditoriums, lodge halls, and funeral homes are cited as prime examples.

First to Smithsonian

Dulles International Airport To Get Carrier's 5,000th Centrifugal

SYRACUSE, N. Y. — The 5,000th centrifugal refrigeration machine produced by Carrier Corp. will be installed in the terminal building of the new Dulles International Airport under construction near Washington, D. C.

The 5,000th chiller is one of two units ordered from Carrier by the Federal Aviation Agency to provide chilled water for use in air conditioning the jet-age facilities of the new airport.

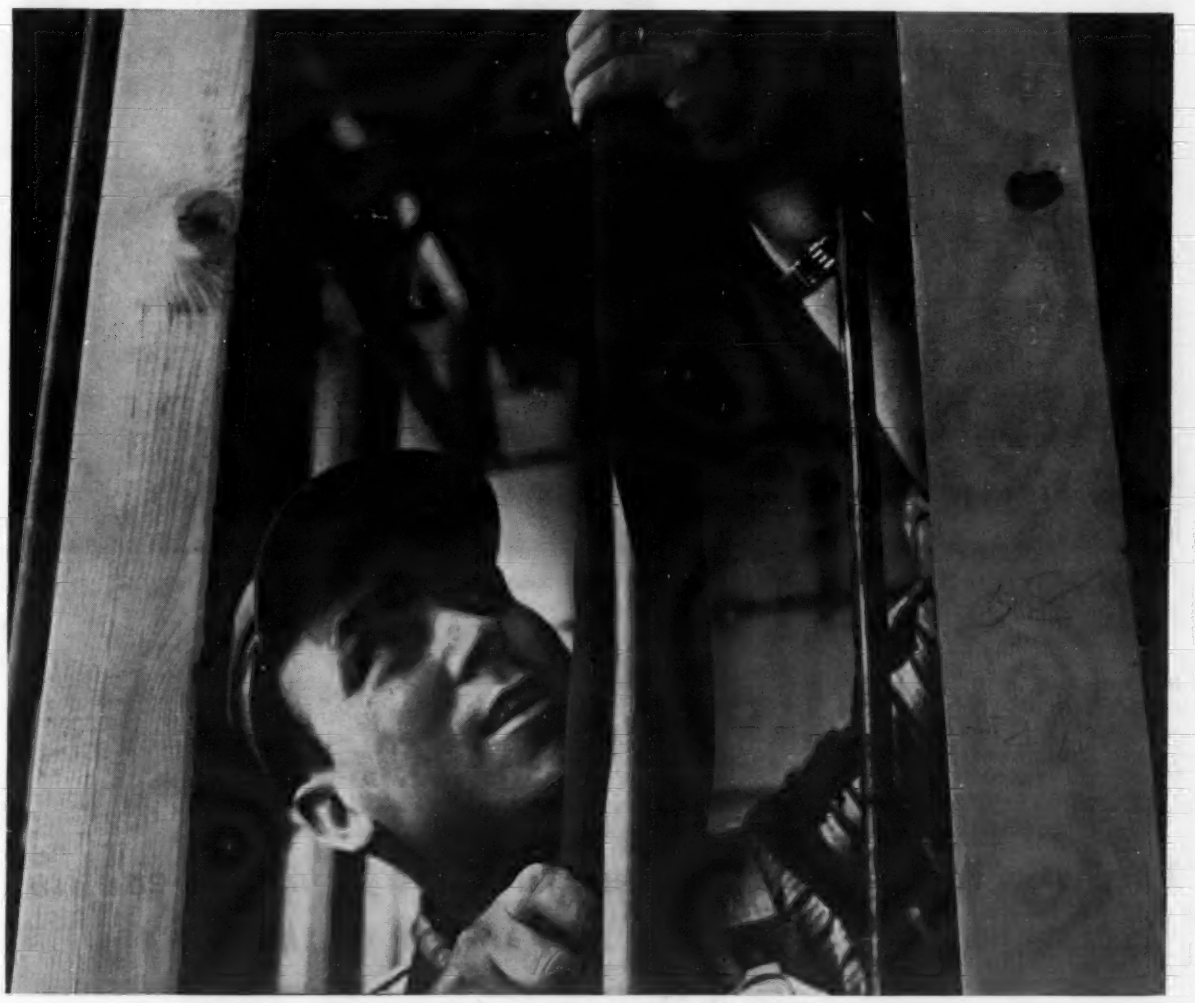
Each of the units will produce cooling equal to the daily melting of 960 tons of ice, according to Charles V. Fenn, Carrier vice president.

George S. Jones, Jr., director of the Air-Conditioning & Refrigeration Institute in Washington, hailed the installation as another milestone in the air conditioning industry.

"Each one thousand machines built since Dr. Willis H. Carrier developed the first one 38 years ago has been built in less time than the preceding one thousand," Jones said.

Dr. Carrier's first centrifugal for use in air conditioning was retired recently after years of service in a Syracuse, N. Y. china manufacturing plant.

The compressor of the original machine has been requested by the Smithsonian Institute in Washington and will be a major attraction at an exhibit of refrigeration equipment to be held in a new wing of the institution next year.



Easy as wrapping a bun around a weenie

LABOR COSTS FOR INSULATING LINES CUT IN HALF BY B.F.GOODRICH CELL-TITE INSULATION TUBING

EVEN when pipe has already been connected, B.F.Goodrich insulation tubing can be slit, snapped on and cemented in seconds. And, if you prefer, you can get it pre-slit for even faster installation. Slitting is unnecessary for new lines—it slips on straight or bent pipe as easily as a ring on your finger. Installation is so fast that labor costs for insulating pipe can be cut 50% or more over old-fashioned twine-wrapping, skirting and other slower methods.

B.F.Goodrich insulation tubing is made of a tough, flexible rubber with millions of uniform, non-connecting cells that seal out air and moisture. It can be used for insulating pipes carrying hot or cold liquids at temperatures ranging from —20°F to 200°F. Clean and easy to work with, doesn't rub off, chip or crumble. It comes in 6-foot lengths, in many wall thicknesses, that are easy to handle, easy to store.

This BFG insulation is also self-extinguishing, so it can be installed on copper tubing before sweat fittings are made—tubing is merely pushed back and held by clamps while joint is soldered.

Try this labor-saving insulation on your next job. For full information on BFG insulation tubing, call your B.F.Goodrich distributor, or contact *The B.F.Goodrich Company, 180 Derby Place, Shelton, Conn.*

INSULATION TUBING BY B.F.Goodrich

A 'Parts and Pieces' Story to a Homeowner?

(2) *'Rig' Helps Texas Salesman Explain Refrigeration Cycle To Residential Air Conditioning Prospects*

Much of the blame for the failure of sales of central residential air conditioning to grow faster has been attached to a lack of any real type of selling at the retail level.

Arch Hughston of Frymire Engineering Co. of Dallas is one salesman who has proved that making "home calls" can develop sales. But there is a unique twist to Hughston's methods; he employs an oldtime piece-by-piece "breakdown" of the product method of selling, to explain to puzzled prospects how air conditioning works, and to drive home the advantages of his product.

In the March 7 issue Hughston described the "rig" which he built himself and can be carried by hand, which includes an expansion valve, piece of round duct with damper, a piece of cooling coil, a can of refrigerant, and other parts of a system.

When Arch Hughston tells his "story of air conditioning" to a prospect, he makes considerable use of a chart of the refrigeration cycle, in which the various states of the refrigerant are shown in color.

As explained in a previous instalment, this chart, together with pictures of the various major parts of the assembly such as the evaporator and condensing unit sections, are mounted on the back side of a removable front of his "rig."

"I start out by pointing out that the drawing will help explain the refrigeration cycle and link the evaporator section on the drawing, which is outlined in black to the picture of the evaporator section shown mounted above the furnace in a typical installation.

"The condensing unit section is also outlined in black on the drawing and I explain to them that this is the part of the assembly which is installed outside of the house, and I show them a picture of what the condensing unit section looks like. This gives them an idea of 'what goes where' so far as the main parts are concerned.

Starts with Expansion Valve

"In going into a detailed explanation of the refrigeration cycle I start with the expansion valve, with the liquid refrigerant going into the valve, I'll say something like—

" 'Well, that liquid is under pressure just as this liquid is under pressure in this small can of refrigerant that I have here.' I pause then and take the can of refrigerant out of the kit, and ask 'Have you ever seen any refrigerant?'

"Most of them have no idea of what refrigerant is like, I tell them to hold out their hands, sometimes they are skittish about it, but most times someone present will hold out a hand. If they hesitate I say

" 'Go ahead and stick your hand out, this refrigerant is non-poisonous, it is non-toxic and low pressure.'

Prospect Will Always Remember Refrigerant

"When they stick their hand out I open the valve and give them a little shot of refrigerant on their hand. They may protest in a kidding way, and they usually rub their fingers together to get the blood circulating again. One thing about this stunt, they may not always remember my name, but I can always identify myself in the future as the man who squirted refrigerant on their hand.

"When I opened the valve on the can some refrigerant goes into the miniature coil that is attached to the can of refrigerant. Moisture starts condensing on this little coil, and this gives me the opening to tell that an air conditioning system does two things: first it takes the moisture out of the air.

Points Out Frost on Coil

"I hold up the coil to draw attention to it, and point to the frost forming on it. What is happening, I explain, is that there is moisture in the air surrounding this small piece of copper tubing, and that moisture is collecting on this coil and freezing there just as it does in their refrigerator.

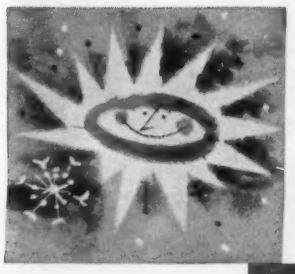
"By the time I make that explanation the frost has begun to melt. It is explained that in air conditioning a cooling coil is not permitted to get so cold as to have frost formed on it, it is always in a 'defrosted' state.

"The frost by this time has melted and water has condensed on the coil and I tell them 'first of all, the unit takes moisture out of the air, then it takes heat out of the air. The moisture in the air is what we call "latent heat" and the heat that you feel or measure with thermometers is called "sensible heat" so first of all the unit removes the latent heat, then it removes the sensible heat.

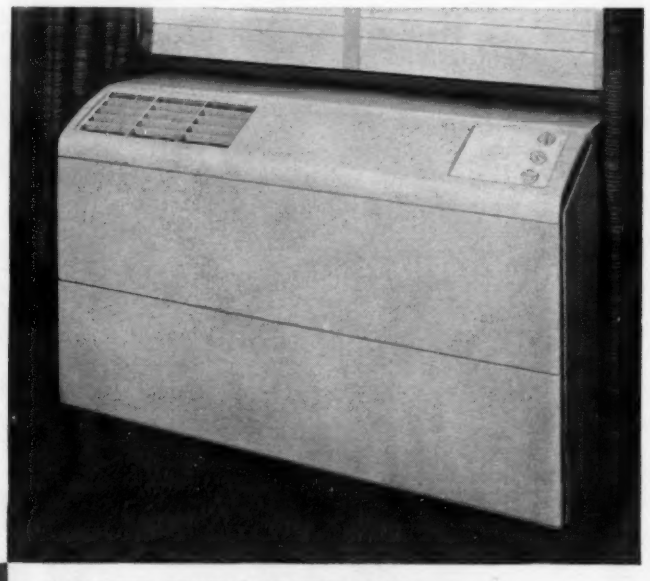
" 'This same thing happens in the evaporator coil,' I tell them, 'this refrigerant goes through that coil, and of course you have air which contains heat crossing the coil, and as that air crosses the coil the heat is removed from it.'

Defines Cold

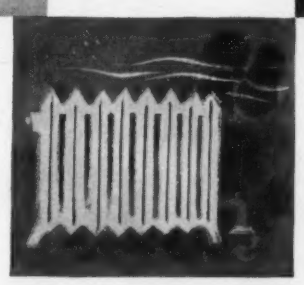
"Here I pause and ask 'Of course you know the definition of cold?' And whether they shake or nod their heads I say 'it is the absence of heat. Heat is absorbed by the refrigerant as it passes through the coil, just as heat is absorbed by a pan of water when you put it on the stove. As heat is transferred from the fire to the water in the case of the pan, heat is transferred in the refrigeration



← **COOLS IN SUMMER**
The Carrier Console makes the stickiest, steamiest air crisply cool. Brings comfort quickly and quietly.



↑ **CARRIER CONSOLE WEATHERMAKER**
Cabinet styled in sand beige, mar-resistant polystyrene. Extends only 7 inches above window sill.



→ **HEATS IN WINTER**
Change over quickly from cooling to heating with Console Weathermakers equipped with accessory heating coil.

The way to provide central air conditioning benefits at just a fraction of the cost!

That's right. Here's a way for you to give your customers the superior benefits of central air conditioning at a fraction of system cost. The way? Tie in central system heating with individual Carrier Console Weathermaker* cooling through steam or hot water lines. This versatile Weathermaker can also be adapted for electric heating.

Carrier Console units dehumidify, filter, circulate and ventilate when cooling or heating. Adapt to fit through double-hung windows, mount on walls or on floor stand. A Carrier Console Weathermaker is the quietest of all room units and the slimmest—12⅝ inches slim. BTU capacity 9500.

How much can installation of Carrier Console Weathermakers save your customers? Find out by calling the Carrier distributor listed in the Yellow Pages of your phone book. Ask him, too, about the special "Lease Plan." Carrier Corporation, Syracuse 1, New York.

**Reg. U. S. Pat. Off.*

BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier

cycle from the air to the refrigerant.

" 'Now that refrigerant boils at a very low temperature,' I continue. 'When it boils it turns into a gas. Now that gas has picked up heat, the air has crossed the coil, and the air coming out the opposite side of the coil from which it enters has had the heat taken out, and that air is cool or cold.

Gas Recovery Explained

" 'Our next step,' I say to them, 'is to recover the gas that has picked up heat. Of course you realize that if you wasted that gas in each cycle the cost of operation would be terrific, so we want to recover that gas and return it to a state where it can be re-used.'

"I point out the suction line in the colored drawing of the cycle. 'That yellow line,' I say, 'is called a suction line, and through it the gas is sucked to the compressor. The compressor does exactly what its name implies, it compresses, it puts the gas back under pressure.

" 'Let me explain what took place when I squirted the refrigerant onto your hand. I had a can of refrigerant that was under pressure; it was in a liquid state and when I released the pressure or opened the valve it expanded rapidly and turned cold rapidly. Well, that is the nature of refrigerant, pressure and temperature are directly related.

" 'When you have low pressure you have low temperature, when you have high pressure you have a high temperature. The compressor raises the pressure and the temperature goes to maybe 150° F., which is what we call a hot gas.

Discusses Condensing

" 'Now how do we get that gas back into liquid form? Let's talk a minute about condensing. When we turned the valve on the can of refrigerant it also sent some gas into the coil and you saw the frost form on the outside of the coil, it was condensing moisture out of the air because the gas that was going through the inside of the coil was colder than the air surrounding it.

" 'We have the same thing taking place here except it is just in reverse. The outside air is at, even on a 105° day, 45° cooler than the hot gas which is enclosed in the pipes. When you blow cool air across the hot coil, it causes that refrigerant to condense just as the water condenses on the outside of a glass if you put real cold water into it.

" 'So, the refrigerant condenses back into a liquid state, from that point it goes into the receiver, and from there to the expansion valve to be re-used to cool the air. Well, that is the refrigeration cycle.' "

Hughston says that he wraps up this explanation of the system by comparing the air conditioning system with the prospect's household refrigerator.

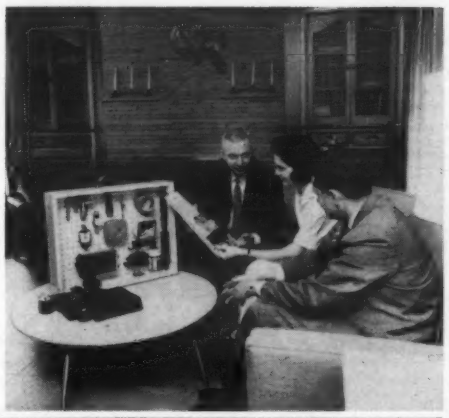
" 'You have a freezing section in your refrigerator which is comparable to the evaporator coil in the air conditioning system, except that in most instances you do not have air blowing across the freezing section,' I tell them.

" 'You have a compressor underneath your refrigerator which compresses the suction gas back into hot gas, and you have a condenser coil going up the back side of the refrigerator, which dissipates the heat.' "

Directs Refrigerator Comparison To Wife

Hughston says he directs this comparison with the household refrigerator to the woman who may be present, because she is familiar with the refrigerator. And by addressing her, you make a gesture to the effect that the husband already understands this.

(In following instalments, Hughston explains how he used his "rig" to put across his own sales story, and particularly to tell a "quality" story. He also will describe the use of certain other visual sales aids.)



"GOOD SELLING requires that you work on appointment, and give yourself time and the right atmosphere to do a good job of telling your story," says Arch Hughston, a top Texas salesman of residential air conditioning. He attempts to make evening appointments, whenever possible, so that he can talk with both husband and wife. A principal feature in his presentation is the use of his "rig" or carrying case containing actual or miniaturized parts of a system plus drawing and pictures.

Rudd Mfg. Becomes Rheem Subsidiary

NEW YORK CITY — Ruud Mfg. Co. was recently made a subsidiary of Rheem Mfg. Co. in a $2,450,000 combination purchase with cash and Rheem common. Only 190,000 shares of Ruud common remain outstanding.

Rheem, which now holds 96% of Ruud common, will continue Ruud manufacture of water heaters and other products, announced A. Lightfoot Walker, Rheem president.

WATER COOLER

10 GALLON PRESSURE TYPE

$139.50*

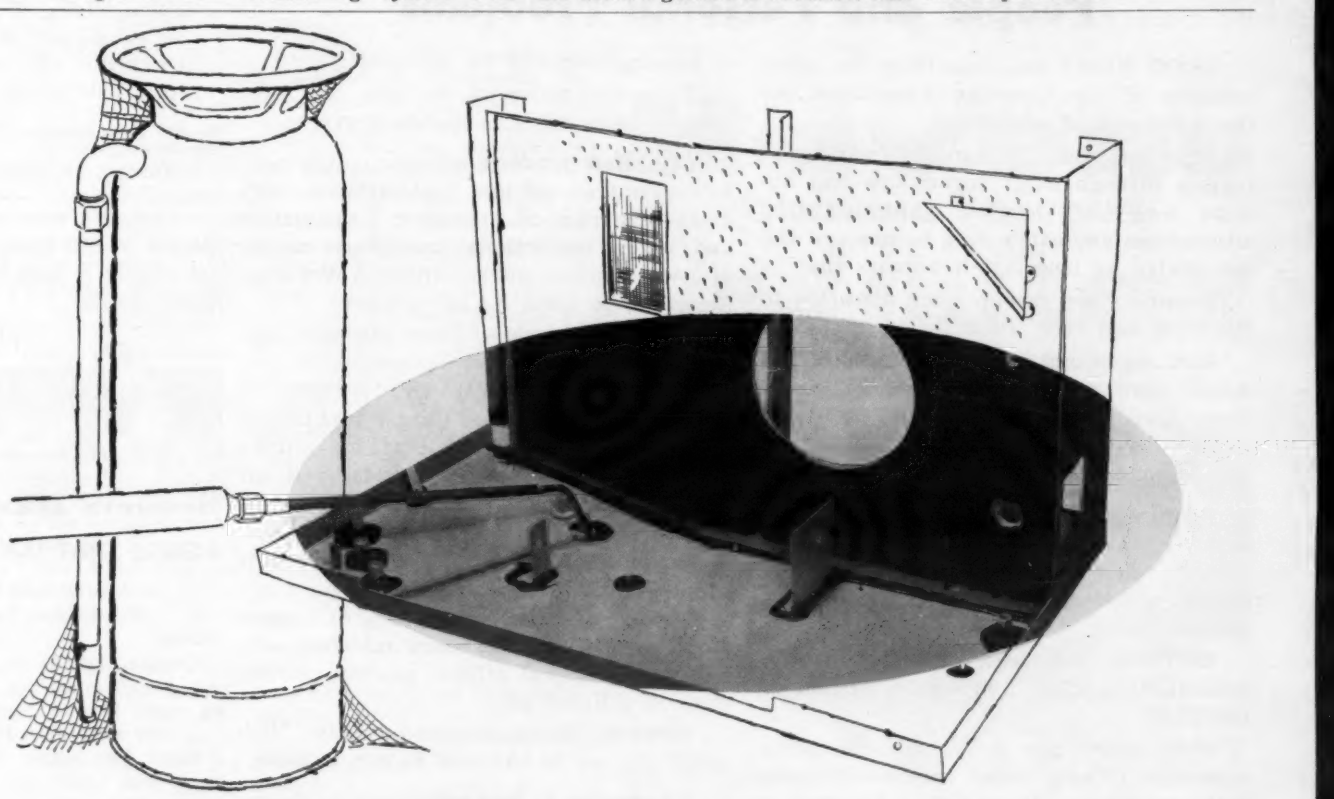
*To DEALERS ONLY

- STURDY • ECONOMICAL
- STAINLESS STEEL DRAIN TOP
- NICKEL FINISHED COPPER COOLING TANK
- ½ H.P. TECUMSEH HERMETIC UNIT
- PRE-COOLER
- 5-YEAR WARRANTY ON REFRIGERATION CYCLE

REMCOR Model CW-10A

Also 5 gallon Bottle Water Cooler—$89.50

REMCOR PRODUCTS COMPANY
321 EAST GRAND AVENUE,
CHICAGO 11, ILLINOIS
manufacturers of water coolers since 1940



seal with safety...

#144.7 Mastic is self-extinguishing!

This fire-safe mastic is an ideal air-conditioning sealer. Because it is self-extinguishing after the solvent has been released, and because it is pumpable, #144.7 is well suited to fast production-line applications. For example:

- Self-extinguishing sound deadener.
- Insulating and protecting bottom pan of room-type air conditioner against corrosion.
- Sealing air-directing partitions.
- Protecting projections, welded studs, annular areas, etc., from corrosion.
- Sealing to keep condensate and air where they belong.
- Holding sound deadening pads in place.
- Miscellaneous applications on dual-purpose air conditioning and heating equipment.

...AND DON'T FORGET THE OTHER #144-SERIES SEALERS

Whatever the sealing characteristic you need, there's probably a #144 Sealer to fill the bill: fast-drying or slow-drying; odorless; capable of retaining "life" under water; break-down resistance to frequent cycling; ability to span seams and gaps without slumping; to take paint baking temperatures without running out of place.

WANT A SAMPLE? Write Dept. R-6, describing your product needs.

PRESSTITE Sealing Compounds
PRESSTITE DIVISION
AMERICAN-MARIETTA COMPANY
K A P

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They'll Do It Every Time

by Jimmy Hatlo

TIME FOR YOU TO DO MY INCOME TAX FOR ME AGAIN, HONEST JOHN- BUT DON'T RAISE YOUR PRICE ON ME AGAIN, WILLYA--OR I'LL DO IT MYSELF--EVEN IF I AIN'T GOOD AT FIGURES....
HERE WE GO AGAIN--IT'S AROUND THE TIME HONEST JOHN CALLS UP THAT HE CAN'T COME IN--HE'S IN BED WITH LA GRIPPE--
HE DID MINE ONCE--THE GOVERNMENT'S BEEN INVESTIGATING ME EVERY YEAR SINCE....
OKAY, FUNGO--THEM ALL YOUR STATEMENTS AND EXPENSES? PUT 'EM IN HERE--I'LL TAKE 'EM HOME WITH ME--I DO ALL MY EXTRA WORK AT HOME, Y'KNOW....
HE'S GOT HIMSELF A NICE LITTLE RACKET--MAKING MISTAKES ON EVERYBODY ELSE'S INCOME TAX AND GETTING PAID FOR IT...
JOHNNO WAS OVER-HONEST WITH MINE-BUT ON HIS OWN HE TAKES OFF EVERYTHING BUT THE PAPER CLIPS....
TUNING IN ON THE OFFICE FIGURO WHO'S WORKING UP HIS OWN LITTLE SIDELINE...
THANX AND A HAT TIP TO ROBERT BERKEY, 66 ROBBELLE ROAD, WHITE PLAINS, N.Y.
JIMMY HATLO
2-20

Pure Science Draws Closer To People and Personal Problems

GOOD NEWS emanates from the latest conclave of the American Association for the Advancement of Science.

After too many years of wandering foggily through loggy logarithms and obscure long-hair theories, muttering into microscopes and attempting to unscrew the inscrutable, at long last it appears that:

Scientists are paying more attention to PEOPLE and their PERSONAL problems.

Most significant reports advanced in this AAAS convention provided awakening evidence that physical, social, and biological scientific investigations intertwine, intermingle, and interlock.

All three of these scientific avenues to discovery (it now is admitted) feed one another, merge into each other—and frequently arrive at the same desirable goal, to wit:

BETTER UNDERSTANDING AND COMMUNICATION BETWEEN PUZZLED PEOPLE.

Fifty years ago a popular newspaper columnist (Finley Peter Dunne) observed that "our Supreme Court follows the election returns."

Scientists pride themselves that they seek neither popularity nor public office. But it is interesting to note that their mutual discoveries now are joining into a "feedback" of Pope's First Principle:

"The Proper Study of Mankind Is Man."

As more than one Nobel Prize winner acknowledged at this AAAS meeting, in concert:

A minor discovery in one field can clue a major breakthrough in another. And they all aid PEOPLE and PERSONAL PROBLEMS.

At the AAAS seminar-series the following breathless "break-through" theorems were advanced:

(a) LIFE on myriads of planets (in distant galaxies) not only is probable; but probably is so advanced that *they* can't be bothered with *our* relatively puny problems —UFO (unidentified flying objects) notwithstanding.

(b) Anybody whose birthday occurred less than 45 years ago possibly can look forward to celebrating his retirement at age 110 or even years beyond that. Credit *expected* cures for cancer, heart disease, and geriatric ailments for this prediction of leaping longevity for the young.

Footnote: those of us who are over 50 still have one foot in the grave.

(c) New products not now on the market—plus laws not now contemplated—may make shambles of "fenced-in" association and union restrictions, traditional means of ownership and control, and God Wot Else, according to some AAAS speakers.

For one example of "new products, new laws":

Nobel Prize winner Dr. Wilhelm C. Hueber, of the National Cancer Institute in Bethesda, Md., reported that his outfit's research studies blame smog-ladened air (polluted by industrial wastes and auto exhausts) as the No. 1 cause of lung cancer.

Small amounts of cancer-causing agents can be found in cigarette smoke, and there is growing evidence to suggest that tobacco particles are irritants which interfere with our lungs' natural defense against carcinogens in polluted air.

However, he states unequivocally: "Polluted city air is the real cancer culprite."

An upsurge in lung cancer can be shown, Hueber claims, between 1900 and 1920—long before cigarette smoking became widespread. Today, lung cancer is most frequent in those cities which register the most industrial pollution.

And, to cap this thesis, he notes that residents of that U.S.A. city with the highest quotient of lung and skin cancer, among all test-cities (Los Angeles) produces the most smog.

New laws, new products will ensue from these findings, it is predicted.

What are we trying to prove? Simply this: Medical investigations, sociological research, chemical and pharmaceutical laboratory scuttle-butt, plus the philosophical thinking of double-dome "egghead intellectuals" are intertwining, FINALLY, into an all-purpose project, to wit:

"The Proper Study of Mankind Is Man."

What's more important to our industry, it turns out and turns up that *the air we breathe and inhabit* is one of mankind's most important studies.

It jolly well better be studied, because polluted air can kill us. Contrariwise, properly conditioned air promotes good health. Air conditioning as an art, therefore, is transforming into the science of *air engineering.*

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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'The Conscience of the Industry'

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Anyone who proposes to do good must not expect people to roll stones out of his way, but must accept his lot calmly if they even roll a few more upon it.—ALBERT SCHWEITZER.

Readers Like Romney

AGREES THAT 'AMERICA NEEDS ROMNEY'

2210 Bradmoor Road
Wilmington, Dela.

Editor:

Congratulations — your "Inside Dope" is correct — America needs George Romney.

I have never seen him or have I heard him speak. However, I have read about him and agree with your article — "George Romney, America needs you!"

Your phrase may be the golden key that will turn a country as he has turned an industry.

If the grass roots of Michigan can show enthusiasm over the political potential of such a man, so can Delaware.

JAMES A. BRUEN

NEVER MET HIM, BUT HEARD LOTS OF GOOD ABOUT HIM

Nevinger Mfg. Co., Inc.
Greenville, Ill.

Editor:

Your current writing about Mr. Romney takes me back to the days when I used to be out around the Kelvinator Plant on Plymouth Road in the middle and late forties.

I never had the pleasure of meeting Mr. Romney in those days (I believe that he was in England running the Kelvinator Plant over there) but I do remember hearing a lot about him and what a wonderful man he was and what a great job he was doing.

Mr. Mason and a Mr. Howard Lewis (I believe) were the two big wigs at Kelvinator then, but of course all this has changed now.

CARL R. NEVINGER

Handy Way to Subscribe

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NAPC Warns Members Against Participating In 'Kick Back' Plans

WASHINGTON, D. C. — The National Association of Plumbing Contractors has warned its 9,000 members against participation in any "kick-back" or "reserved commission" plan by which wholesalers retail their merchandise directly to the consuming public.

Describing the plan as legally improper and highly dangerous if adopted, association President Irvin L. Rechkemmer has written to the presidents of all affiliated state associations of plumbing contractors urging that they take immediate steps to be sure their members are "abiding by Federal statutes and completely within a legal operation."

The communication included an opinion from Cleveland attorney Charles W. Sellers, of the firm of Thompson, Hine & Flory, which represented NAPC in the 1940-47 Cleveland Anti-Trust Case and continued as NAPC counsel until 1957. Sellers' letter urged that the so-called "reserve commissions" plan "should be strictly and constantly avoided."

According to Sellers, "The practice would unquestionably lead to a charge of violation of the antitrust laws, another attempt to eliminate the master plumber as a retailer, as well as another long and expensive trial.

"Secondly, plumbing contractors must be retailers if they are to prosper as they should. This means that they must perform the economic functions of a retailer."

The letter continued: "The officers of the National Association of Plumbing Contractors are the guardians of its good name and successful operation and charged with the duty of keeping it law-abiding. Therefore, it is my opinion and advice to you, if any members adopt any such plan, that you invoke the provisions of Article V of the (NAPC) By-Laws and expel them, because only by this action can the National Association effectively protect itself."

Rechkemmer added that NAPC will never condone any system of distribution or policies which are inconsistent or illegal and that the Executive Committee would recommend to its board of directors the withdrawal of state charters in the event that affiliated state associations do not comply with this warning.

'Freon' Div. Shifts Sales Representatives

WILMINGTON, Dela. — Du Pont's "Freon" Products Div. has announced a series of changes in assignments of its technical sales representatives.

Robert A. Geuting has been assigned to the division's Chicago office, William B. Gest to Cleveland, Lawrence R. Sullivan to New York City, and Patrick B. O'Donnell to a new sales territory in the Houston area.

Geuting has been the division's Cleveland area representative for the last four and a half years. Gest has been associated with du Pont since 1941 and with the "Freon" Products Div. since mid-1959, according to the announcement.

Sullivan joined du Pont's Petroleum Chemicals Div. in 1951 and was transferred to the "Freon" Products Div. early this year.

O'Donnell joined the Treasurer's Dept. of du Pont in 1951, where he held various accounting positions until 1959 when he was transferred to the "Freon" Products Div. as a sales correspondent.

Space Heating Session Set For Power Conference

CHICAGO — A session on space heating has been scheduled for the 22nd annual American Power Conference to be held March 29-31 at the Hotel Sherman here.

This session is set for Tuesday, March 29, from 2 to 3:30 p.m. Papers to be presented are "Solar Energy for Future Heat Pumps" and "Methods for Evaluating Heat Losses Through Composite Slab Floors."

Authors of the first paper are E. B. Penrod, professor and head of the Dept. of Mechanical Engineering, University of Kentucky, and K. V. Prasanna, Dept. of Mechanical Engineering, Illinois Institute of Technology.

The other paper is authored by Michael A. Chaszeyka, research engineer, Armour Research Foundation, and Stothe P. Kezios, professor of mechanical engineering, Illinois Institute of Technology.

Donald M. Madsen, associate professor of mechanical engineering, State University of Iowa, will serve as session chairman. Co-chairman will be Lois Graham, assistant professor of mechanical engineering, Illinois Institute of Technology.

More than 3,000 industrial and electric utility executives, engineers, educators, and government officials are expected to attend the power conference.

The three-day meeting will include some 95 papers and addresses devoted to all aspects of the power industry.

One of the speakers will be Walker Cisler, president of Detroit Edison Co. and of the American Society of Mechanical Engineers. He recently led a group of U. S. utility executives on a tour of Russia and will recount his experiences at an ASME luncheon March 29.

UEI Courses Merged with LaSalle Extension University

CHICAGO—All of the courses of Utilities Engineering Institute have been merged with LaSalle Extension university, it was announced recently by E. P. Sorensen, UEI president.

He said LaSalle has set up a new corporation, Wayne School, Inc., as a subsidiary to conduct the courses of training which UEI has developed since its founding in 1927.

The business office and home study department has moved to LaSalle's headquarters at 417 S. Dearborn St., Chicago 5. However, the shops and class room will remain at 2525 N. Sheffield Ave. indefinitely.

Sorensen said the merger move was made to enable him to devote more of his time to Airo Supply Co., of which he is president. Sorensen added that he and his associate, Walter H. Hoehne, will no longer be a part of the school operation. All of their staff, however, will continue with the operation.

Courses offered include those in air conditioning and refrigeration.

Thinking of—

- **changing territories**
- **expanding your territory**
- **taking on new lines—**

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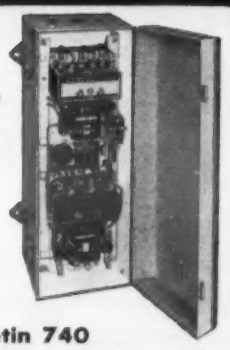
Your opportunity may be there.

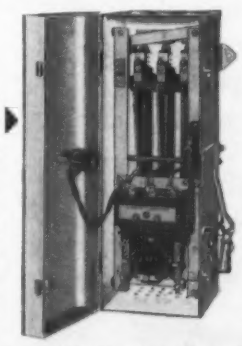
Where "starting current" limitations must be satisfied—

ALLEN-BRADLEY STARTERS have no equal



A-B QUALITY

Bulletin 640
Stepless acceleration of heavily loaded compressor motors is provided with A-B Bulletin 640 graphite compression disc resistance starters. The Bulletin 640 is operated by hand lever. Smooth starting is under control of the operator. No more lamp flicker.

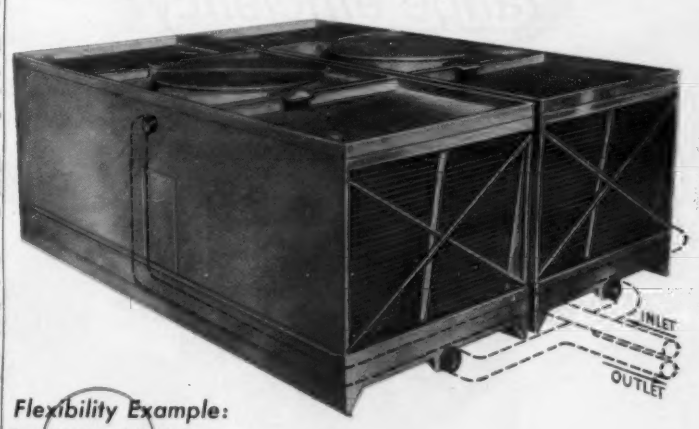


Bulletin 740
With the A-B Bulletin 740 reduced voltage starter, graphite disc resistors are automatically inserted in series with the motor for velvet smooth starting. These resistors can be adjusted to motor and load conditions for stepless acceleration of the motor.

Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

ALLEN-BRADLEY
Member of NEMA
Quality Motor Control

Havens
COOLING TOWERS GIVE YOU FLEXIBILITY



Flexibility Example:
Two 100 Ton Units Side by Side with Suggested Piping Method.

"VM" SERIES SHIPPED PRE-ASSEMBLED
Achieve Large Tonnage Installation Easily by Adding Additional Towers

Havens offers maximum flexibility with pre-assembled packaged cooling towers that **incorporate internal piping.** Large tonnage installations can be accomplished easily and at a big savings by using additional towers. Havens "VM" Packaged Towers are available in 80 - 100 - 125 and 150 ton sizes. Other capacities and styles also available.

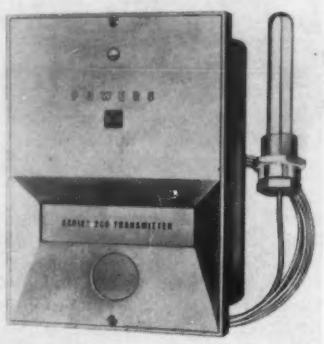
HAVENS TOWERS FEATURE:

- **Shipped assembled ready for hoisting, piping and wiring**
- **Easily detachable hoisting yoke eliminates elaborate slings for hoisting**
- **All steel construction—hot-dipped galvanized after fabrication**
- **All heart California redwood fill**
- **Low silhouette**
- **Anti-friction ball bearings equipped with moisture barrier seals**
- **Open gravity type distribution with drilled orifices and overflow standpipe**
- **Simple installation**

Write for Literature
Havens COOLING TOWERS
Division of
HAVENS STRUCTURAL STEEL COMPANY
1713 Crystal Avenue, Kansas City 26, Missouri

Transmitter-Receiver Control Offered

● Newly designed transmitter and receiver equipment for remote temperature control has been announced by The Powers Regulator Co., Dept. AH&RN (ACD), 3434 Oakton St., Skokie, Ill.



Applications of the transmitter-receiver system include both heating-cooling-air conditioning and industrial processes, especially when remote control is involved.

"The Series 200 transmitter transduces a temperature measurement into a 3 to 15 p.s.i. air pressure signal from a remote location," it was explained. "The signal may be sent to a receiver gauge which continually indicates the temperature measurement. The transmitter may also serve as a sensor for a remotely located receiver-controller.

"Operating in conjunction with the transmitter, the Series 200 receiver-controller maintains a selected temperature at a remote location. It can therefore be used at a much greater distance than that of the standard thermal systems.

The receiver-controller compares the transmitter air signal with its set point, and accurately adjusts its control pressure to maintain the desired control ordered by the transmitter signal. The set point is manually adjusted by an exposed knob."

Chase Develops Stronger Staples

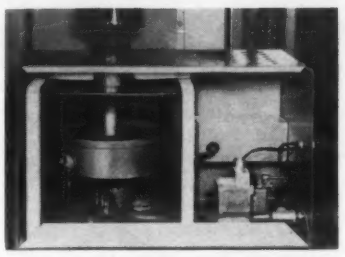
● Staples for supporting water tube and piping, electric cable, and conduit have been given more strength and resistance to driving damage through use of a high-strength nickel silicon alloy developed by Chase Brass & Copper Co., Dept. AH&RN, Waterbury 20, Conn.

The new staples are designed with annular threads to grip wood fibers and thus give extremely high resistance to pulling out, it was pointed out. This allows them to be driven part way in to support the tube until the staples can be driven home. Silnic Bronze Tube Staples incorporate a minimum of "hammer surface" to facilitate use in radiant heating systems where plaster or other finishing coats must be applied, the company said in the announcement.

The staples are available in sizes to accommodate tube in four sizes.

Gas-Fired Humidifier Is for Home, Industry

● A new gas-fired humidifier for home and industry has been developed by Valley Mfg. Co., Dept. AH&RN, Valley, Neb.



The humidifier, called "Valley/Aire," has a maximum capacity of 24 gals. of water vapor in 24 hours, it was stated. For commercial applications, several units can be used where higher capacities are needed.

Company officials said the unit would maintain up to 40% relative humidity in areas of 30,000-40,000 cu. ft. when outside temperatures register 0° F.

The humidifier unit measures 23 by 14 by 14 and attaches directly to the forced air heating unit. Through humidifier controls the Valley/Aire introduces water vapor directly into the warm air duct system on demand and only while the blower of the furnace is operating, according to the company. Cost of operating the unit is calculated at 75¢-$1.50 per month, depending upon the month, region, and winter conditions.

The Valley/Aire consists essentially of four parts: A water system utilizing a float valve control; a small, "high efficiency" gas heating system; a system of controls "providing 100% safety shutoff"; a graduated humidity control in the upper areas of the home or commercial business.

Automatic Changeover Control Released

● A new automatic changeover control has been released by Penn Controls, Inc., Dept. AH&RN, Goshen, Ind.

Designated the Type 426X, the new control is for use with combination heating and cooling thermostats.

"Control feels coil water temperature and automatically selects the correct thermostat function," the company pointed out. "It is recommended for convectors, fan coils, and blast coil units, etc. where an accurate surface mounted temperature element is required.

"The surface mounting plate of the 426X is a liquid filled sensing element, providing very fast response to change in liquid temperature. Single-pole, double-throw silver contacts are enclosed in a tamper-proof, dust-tight enclosure. Range of the control is 60° to 90° F. with fixed differential of approximately 10° F. Electrical rating is 10 amps., full load at 120 volts a.c."

All-Purpose, Leak-Proof Fabric Introduced

● A new "all-purpose, leak-proof" fabric has been introduced by Elgen Mfg. Corp., Dept. AHRN, 32-49 Gale Ave., Long Island City, N. Y.

Called "Neo-Bestos," it is said to be a strong, lightweight fabric. Manufactured of Underwriter's grade asbestos and coated with "Neoprene," the fabric is impregnated with aluminum for greater strength and for neater looking installations on flexible ductwork, the company stated.

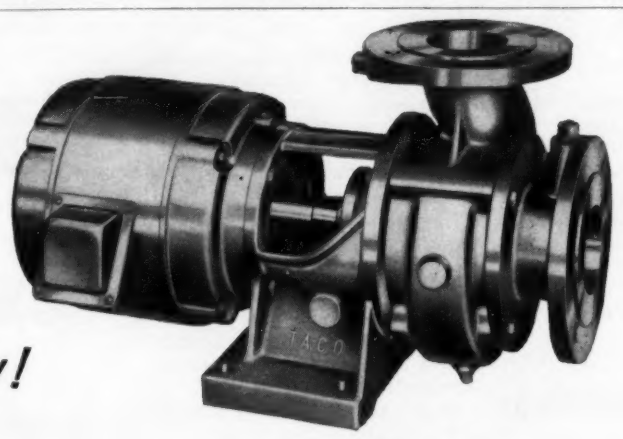
Elgen said Neo-Bestos "combines in one fabric, the qualities of both Neoprene and asbestos. Available on all of Elgen's patented 'Silent Duct' flexible duct connectors, Neo-Bestos offers the superior resistance to heat found in asbestos and the vital airtight qualities of neoprene."

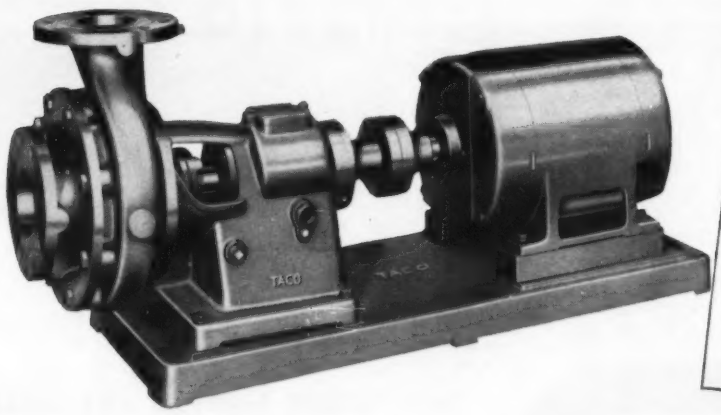
Multi-Purpose Oil Bows

● "Anderol L-456," a multi-purpose oil for gears, slides, bearings, and precision parts, has been developed by the Industrial Lubricants Div., Lehigh Chemical Co., Dept. AH&RN, Chestertown, Md.

More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

Now... the pump line with total range efficiency!





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- Highly Standardized Component Parts
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- Mechanical Seals or Stuffing Boxes
- Ball or Sleeve Bearing Frame
- Stainless Steel Shaft Sleeves
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- Available with EXTRA Quiet Motors

TACO "LP" *Single Stage Centrifugal Pumps*

High overall efficiency throughout its entire usable range is a basic characteristic of every TACO "LP" Series Pump. And the *complete selection* of sizes available gives *complete* coverage . . . permits each pump to be precisely tailored to the installation. As a result, you're *certain* of better performance when you specify an "LP" . . . and can often save on motor cost and power consumption.

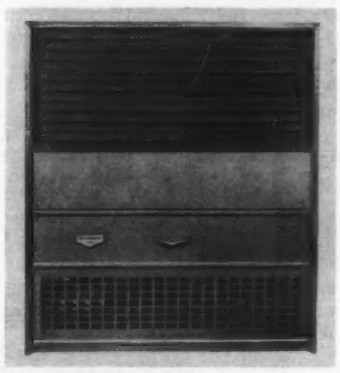
Many of the outstanding advantages of the "LP" line are the result of their "preferred number" design (ASA Standard No. Z 17.1). Using it, TACO was the first manufacturer with a line of pumps uniformly designed and engineered to provide the broadest possible performance field with the minimum number of pumps. It gives consulting engineers and contractors pump versatility and quality that they can specify with confidence.

TACO also manufactures a complete line of smaller pumps and circulators for air conditioning and heating installations. Get complete specifications in time for your next installation.

Write TACO HEATERS, INCORPORATED, 1160 Cranston Street, Cranston 9, Rhode Island.

Taco

SERVING THE HYDRONIC INDUSTRY SINCE 1920



Dearborn Offers Line of Vented Wall Heaters

● A new line of vented wall heaters has been announced by Dearborn Stove Co., Dept. AHRN, 1700 W. Commerce, Dallas 22.

Dearborn, a manufacturer of vented and unvented space heaters, is entering the wall heater market with a deluxe model called the "Sealed Flow" heater.

The Sealed Flow heater has been approved by The American Gas Association for use on both LP and natural gas," the company said. "It has a rated input of 35,000 B.t.u. Sales features include Dearborn's 'Cool - Safety' cabinet, completely sealed combustion system, forward flow discharge louvers, lifetime cast iron burners, a 200 c.f.m. counterflow blower, and either a self-contained or wall thermostat.

"The Sealed Flow design permits installation of the heater on an outside wall. With this design, air for combustion is brought in through a sealed vent, and combustion gases are returned to the outside through the same vent assembly—insuring complete safety. No other flue or vent is required."

Superheat Indicator Checks Performance

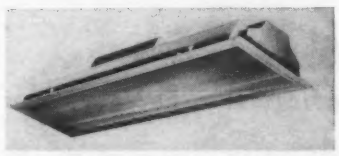
● Called a "Superheat Indicator," a special thermometer that can be used not only for checking the superheat of coils but also the performance of water-cooled condensers, brine systems, etc., has been introduced by Drake Refrigeration Co., Dept. AH&RN, Marshall, Ill.

The indicator is a simple bimetal thermometer mounted in a specially designed cast aluminum case that can be readily clamped by means of a spring and chain (included) to any size tubing or pipe, assuring good thermal contact. Scale reads from -50° to +100° F.

For most operations, including checking of superheat settings of expansion valves, two indicators are required. One is clamped at the evaporator inlet; the other at the evaporator outlet. Difference in readings of the two thermometers shows the superheat.

By clamping an indicator at both the water inlet and outlet of a water-cooled condenser, clogging or scaling of the condenser can be disclosed, the manufacturer also says.

Recessed Air Diffuser Has Light Troffer Unit



● A recessed air diffuser incorporating an enclosed light troffer unit has been developed by the Barber-Colman—Day-Brite research facilities, according to Barber-Colman Co., Dept. AH&RN, 1300 Rock St., Rockford, Ill.

This new diffuser is available in 1 ft. by 4 ft. and 2 ft. by 4 ft. sizes and two, three, or four fluorescent tubes.

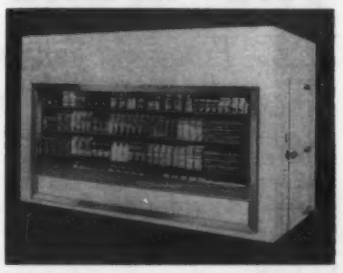
"Engineered air distribution, for year-round air conditioning, is provided by this new diffuser through slots along both sides of the light fixture," it was pointed out. "A 5-ft. expanding cone damper, for controlling air volume, is accessible by unlatching the bottom of the diffuser. Discharge air is completely separated from ballasts, fluorescent tubes, and reflecting surfaces."

Soldering Flux Compounded for Stainless Steel

● "Amco #121," a soldering flux specially compounded for use on all types of stainless steel and non-corrosive alloys, has been developed by American Solder & Flux Co., Dept. AH&RN, 19th & Willard Sts., Philadelphia 40.

"Its active fluxing characteristics remove the oxides and prohibits reoxidation of both the base metal and the solder, permitting more efficient and lasting soldering of stainless steel," the announcement said. "Excellent wetting effect allows any tin-lead solder to flow freely at a minimum temperature. Metal will not buckle or discolor."

McCray Cooler Said To Save Space, Restocking Time



● A new "Koldflo" combination reach-in, walk-in cooler with a completely open front for the vertical display of dairy products and with storage in back, has been announced by McCray Refrigerator Co., Inc., Dept. AH&RN, Kendallville, Ind.

The new coolers are said to save valuable space on the sales floor, greatly reduce restocking time, and stimulate impulse buying.

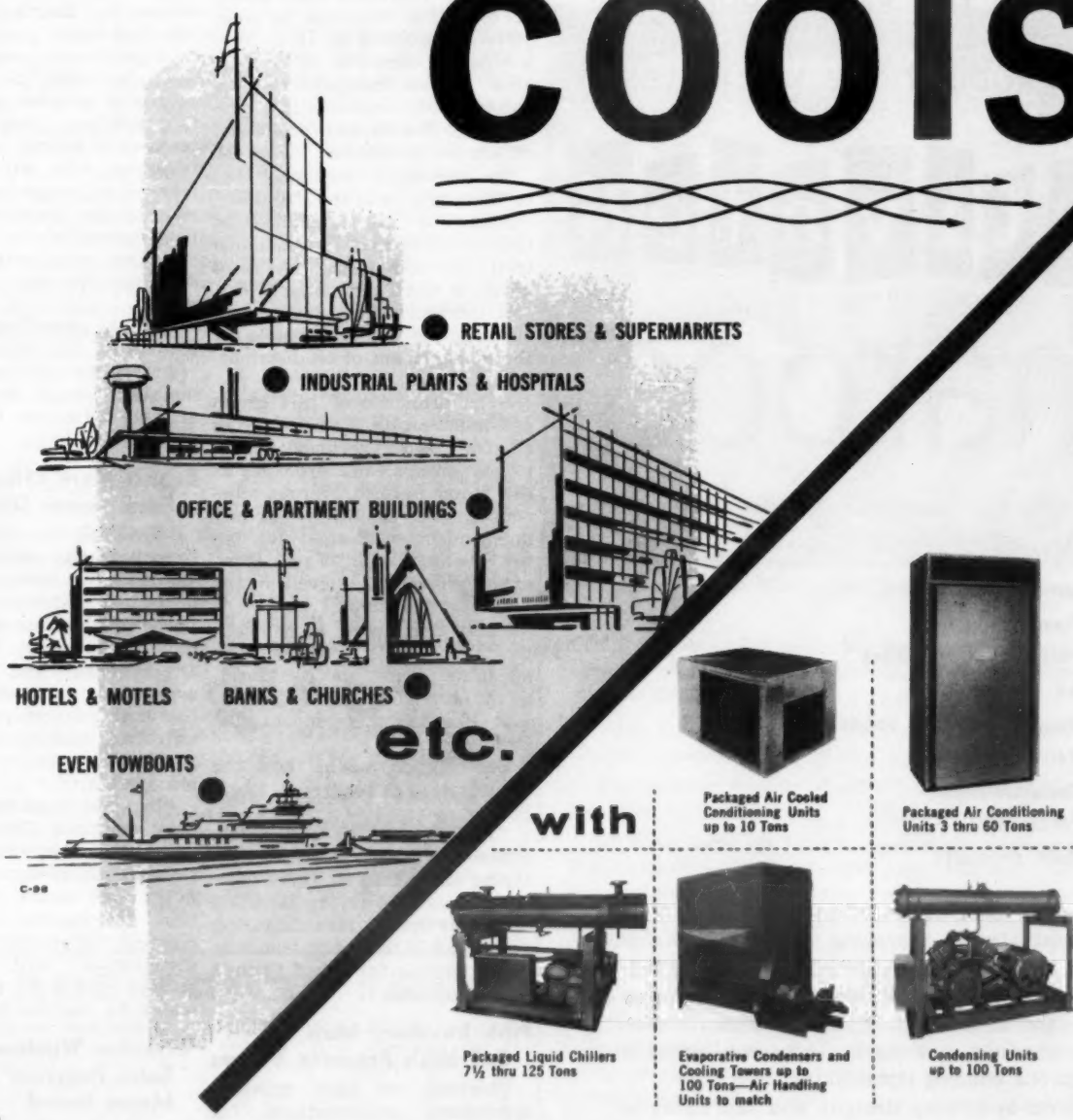
The Koldflo display openings are 44 in. high and available singly or in combinations of 8 ft. and 12-ft. widths. They feature three tiers of shelves as well as a large bottom compartment. The top two shelves are 20 in. wide, the lower one 16 in. wide and the bottom compartment is 25¼ in. wide. All shelves are positioned at comfortable shopping heights and sections can be adjusted individually on 1-in. centers, McCray said.

Perforated aluminum panels, which act as separators between display and storage sections, slide on self-lubricating nylon rollers to give access for restocking from the rear. Fluorescent lights across the front top of the opening and under each 20-in. wall shelf illuminate the display. Price tag moldings run the full length.

"Koldflo fronts get adequate refrigeration for the complete protection of the product from two large coils, one in the top and the other beneath the floor of the display compartment," it was stated.

Curtis

cools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with
Packaged Air Cooled Conditioning Units up to 10 Tons
Packaged Air Conditioning Units 3 thru 60 Tons
Packaged Liquid Chillers 7½ thru 125 Tons
Evaporative Condensers and Cooling Towers up to 100 Tons—Air Handling Units to match
Condensing Units up to 100 Tons

And in all applications—Curtis units perform dependably, always up to and frequently surpassing rated capacity. Key thing to remember is this...Curtis manufactures a complete line of units ideally suited to any application your customers are bidding on. You can depend on Curtis for high quality equipment with dependable performance. And a steady national advertising campaign developed around well known prestige installations helps pre-sell your customers. Your profit on Curtis is substantial, and your customers like the minimum service needed.

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The Crane Story

President Songer Relates Story of Slumbering Giant's Awakening—Its Expansion, Decentralization, Marketing Plans

Editor's Note: Industry interest in the activities of Crane Co. has heightened with Crane's recent acquisition of the operating assets of National-U. S. Radiator Corp. including such major operations as Drayer-Hanson and Viking Air Products. For this reason, a talk presented recently by Crane's president on some of the things the company has done, is doing, and plans to do are reported in considerable detail.

DALLAS—Some of the thinking behind the recent moves by Crane Co. and some details on its plans for the future were discussed recently by W. A. Songer, president, in a talk at the annual convention of the Wholesale Distributors Association.

Speaking on the subject, "Crane Is on the Move," Songer noted that in 1957, a leading business magazine referred to the company as the "Slumbering Giant."

"During the past several months," he said, "Crane has been waking up with a bounce. As independent wholesale distributors, you are interested in how this new activity affects you, and what you should be able to expect in the future."

First, Songer discussed the decentralization program recently announced by the company.

"Crane has traditionally been a highly centralized company," he noted. "Back when it was a smaller company, with a more limited product line, this plan of organization may have been satisfactory. However, a centralized organization is cumbersome and restrictive to a large company growing through diversification of products and markets.

Centralized Organization Was Growth Deterrent

"Soon after arriving at Crane, I realized that our plan of organization was one of our greatest deterrents to progress.

On the first of [February] we made the big change: Crane is now decentralized. We have created five groups. Each group of operating divisions is completely organized as if it were a separate company. It is operated as an independent and autonomous organization, responsible for its own profit and return on investment."

As previously reported, one of these groups is the Plumbing, Heating & Air Conditioning Group and another is the Industrial Products Group. A third group is the Crane Supply Co., "an independent and autonomous organization, responsible for the management of 53 distributing branches.

"The branches of this group are called on by the sales forces of the two previously mentioned groups, and are sold at the same prices, terms, discounts, and conditions as any independent wholesale distributor," Songer said. "There is no extra promotion allowance and no factory rebate.

"This group must be competitive and make a profit with an adequate return on its investment, or it goes out of business just like any independent distributor."

Showing on a slide how the organization picture looks, Songer commented:

"You will notice a complete absence of sales and manufacturing at staff level. There is no longer one man trying to direct many diversified manufacturing plants nor is there one man who is responsible for all of Crane's sales activities.

Pink Lavatory Man Doesn't Sell High Pressure Valves

"Instead, we have provided specialized organizations for each group of products or markets.

"Now we don't ask one man to try to service the entire product line from pink lavatories to high-pressure valves. When a Crane representative calls on a wholesale distributor, he will either be a representative of the Industrial Products Group or a representative of the Plumbing, Heating, and Air Conditioning Group. As such, he will develop a know-how and specialized approach to marketing just that group of products.

"Instead of putting all of our orders into one processing center, they will be processed separately by each group. I think you will agree this should make the Crane Co. a lot easier to do business with than the old centralized organization with layers of staff and the kind of 'buck passing' that went with it.

"By now it is pretty evident that we were serious last summer when we announced a transfer of emphasis away from distribution through our company-owned branches. Since that time, we have discontinued 77 Crane branches and are retaining 53 for 1960.

"By the end of this year, we will know whether the Crane Supply Co. has done an effective job of distributing Crane products, and has made sufficient profit to justify its existence.

Closing Branches Opens Markets for Wholesalers

"In the meantime, we have opened up tremendous markets for independent wholesalers. With the closing of the branches we started building independent wholesale distribution on a selective basis.

"I want to emphasize the word 'selective.' I don't mean saturated as some companies in this field have done. We are interested in strong, stocking distributors who will give good market coverage and distribution to our products. We are not interested in signing up everyone on a saturated basis so that no one makes any money.

"At the same time, we have eliminated 124 short line distributors who did not choose to maintain ample stocks and to actively promote Crane products.

Expect More Effective Job From Fewer Distributors

"With all the closing of the branches, and with all of the additions we have made in independent distributors, we have fewer in number today than we did to begin with. However, we are confident that these fewer selected outlets will distribute the bulk of our product more effectively and more aggressively than was the case under the old system.

"In some markets we do not have adequate distribution and are still looking for good, aggressive stocking distributors, but I can assure you that no new distributors will be appointed if it means that present distribution will not have enough market potential in which to operate profitably.

'Effective Wholesale Sales Program' Memo Issued

"It is one thing for a company to sell its own branches and start appointing independent distributors. But by that act alone it does not create a wholesaler-oriented company. Recognizing this, I issued a memorandum to the Crane organization, on Oct. 30, entitled 'Effective Wholesale Sales Program.'

"This memorandum indicated that three major areas needed immediate attention. They were:

"1. The product line that Crane was selling to its own branches was not necessarily suitable for effective independent wholesale distribution. The organization had to face the fact that while you can ship a factory branch whatever you want, an independent wholesaler buys from you only what he can successfully market.

"2. Crane had operated a branch system for so long that the organization had geared itself to a family relationship rather than to one of serving independent wholesalers who demand and require good customer service.

"3. In the administration of a factory branch system, orders and directives can be issued from headquarters. Distribution through independent wholesalers requires a sales force and a completely integrated marketing program which recognize their needs and wants; a sales force which is capable of providing service, inspiration, and leadership.

"The Crane organization responded immediately. A great many items were dropped from our product line and development programs were started to fill product lines which were not

Board Urges Election Of 3 New Directors, Dropping Incumbent

CHICAGO—Crane Co.'s board has proposed election of three additional directors and dropped one dissident director from the slate to be presented at the annual shareholders' meeting April 26.

Not on the management slate was incumbent Robert B. Crane, great grandson of the founder of the company. He has been at odds with Thomas M. Evans, chairman, over the latter's methods and procedures.

Proposed as new directors are Wesley A. Songer, Crane president; Robert Heller, president of Robert Heller & Associates, Inc., a Cleveland management consulting firm; and Charles W. Veatch, financial consultant to the H. K. Porter Co. Incumbents include Evans and two others.

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complete. Product improvement and modernization was stepped up considerably.

"To provide better service, a program was instituted to give prompt order acknowledgement and efficient order handling. There is still more to be done on this program but I am encouraged by complimentary letters and phone calls from wholesalers who commented on the improved service.

"The third part of my memorandum regarding the wholesalers sales force has pretty well been handled by the decentralization into product groups which permitted setting up specialized selling organizations to better serve the wholesaler.

"As another step toward working closely with our distributors to develop the kind of a company they like to do business with, we are announcing today the formation of distributor councils.

Distributor Councils Planned for 2 Groups

"There will be a Distributor Council for the Industrial Products Group and also one for the Plumbing, Heating & Air Conditioning Group. These councils will be made up of some dozen leading, independent wholesale distributors who will be selected from different parts of the United States and will include the very large as well as small distributors.

"It is our plan to call regular meetings of these councils at the headquarters of each group and spend a couple of days going over both previously prepared agenda material as well as open discussions on how both Crane Co. and its wholesalers can improve their operations and thereby their profits.

"I can assure you we don't want any 'yes' men in that group; we are prepared to face up to problems, and I guess by now you know that Crane doesn't do things just because it has always been done that way."

Continuing, Songer noted that when he first came to Crane, he was anxious to learn all he could about the plumbing and heating industry.

'Pricing Methods Stopped Me In My Tracks'

"What stopped me in my tracks," he said, "was the industry method of pricing. I found that, as a rule, the regular prices were used for everyday transactions regardless of the quantity purchased. This was understandable although not entirely reasonable.

"The baffling situation to me was the procedure used for special projects or large jobs. Such transactions became open invitations for manufacturers to bid for the job and pricing followed suit. A tobacco auction is more orderly and to the point.

"I asked, 'Why this unusual form of pricing?' and the only available reply seemed to be, 'That's the way it is done in the plumbing and heating industry.'

"This is the industry's justification for a pricing procedure in the primary market that is, perhaps, the most chaotic in the country. It is a most serious matter. It affects your future and the future of all manufacturers in the industry. Currently it affects your profit picture and ours.

"Have you as a wholesaler ever taken time out to seriously consider the present industry pricing system? We might well ask ourselves, 'How can an industry go on for years without order in so vital an area as pricing?'

"Frankly, your past successes are a tribute to your individual management abilities. You have succeeded not because of, but in spite of, this unstable pricing situation. There is no substitute for solid business principles and we just don't have them in our current industry-wide pricing procedures.

AISA Action Seen As Most Encouraging

"One of the most encouraging things I have read since I have been associated with the plumbing and heating industry is the communication issued by your American Institute of Supply Associations on Dec. 10, 1959, regarding their recommendations for a firm primary market. This is truly a progressive step and one that should be encouraged by all concerned.

"They plead for an independent adjustment of manufacturers' policies on quantity purchases. They condemn the current unfair and in some cases discriminatory practices of charging wholesalers published prices while making substantially lower prices on 'Special job quotations,' and they attack several other practices which eventually affect prices.

"This is an excellent beginning and one that merits the industry's wholehearted cooperation. You may logically then ask as a manufacturer, 'Why don't you just comply?'

"There is nothing we would like better but we are not an isolated self-contained unit. We have, and need, our customers, and these customers are you. Many of our procedures and policies are dictated by you whether you are aware of this or not. Your wants, desires, and welfare are uppermost in our minds.

"A short while ago we in Crane were determined that the unfair policy prevalent in the industry of charging the wholesaler more for the material that he stocks than for the material that he sells on the job was grossly unfair.

"Therefore, on June 26, 1959, we issued a price schedule to all wholesalers initiating a graduated discount schedule for quantity purchases based on savings to be effected by us in shipping larger orders. This applied uniformly to all wholesalers for any kind of order—for stocking purposes, or for special jobs.

Crane Removed Themselves From Auctioneer's Block

"We removed ourselves from the auctioneer's block and returned the secondary market to the complete and sole control of the wholesaler to whom it justly belonged. . . .

"Unfortunately, although we were personally sold on this economically sound business practice which afforded our wholesalers an opportunity to plan, quote, and sell under a stable pricing arrangement, our customers, the plumbing and heating wholesalers, apparently were not ready for it.

"When the wild market place bidding began to take place on projects and jobs, further price concessions were sought from Crane and we eventually bowed to these demands. . . .

"Money making principles exist that will build any type of business and the plumbing and heating industry is no exception. . . . We can be revitalized and uplifted by adopting simple procedures that other successful, profitable industries have been using for years. In fact, nothing less than a logical, consistent, and fair pricing policy would be a good start."

In concluding remarks, Songer noted that Crane has announced a program to meet the "challenge of the sixties."

"We call it, 'Direction 70'," he pointed out. "Direction 70 is a whole new marketing, manufacturing, and research concept. Our objectives are as follows:

"To establish streamlined distribution; to provide better and faster service to our customers; to provide specialized marketing service to better fit your needs; and to develop new products for this growing market."

Among other things, Songer also noted that Crane has established separate research programs and separate research facilities for each of its product groups. This will enable them to accelerate specialized research activity to improve their existing products and to develop new products, he said.

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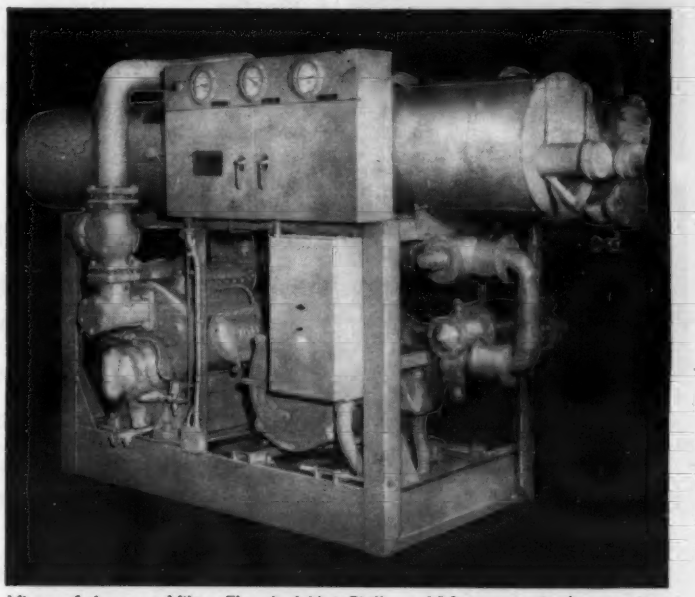

View of the new Vilter Flooded Uni-Chiller—100-ton nominal capacity.

Compact, space-saving design, low cost and a flooded water chiller are some of the important advantages of the new Vilter flooded type Uni-Chiller.

While especially suited for air conditioning applications, Uni-Chillers fit readily into almost any liquid chilling system.

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All components are sized to operate efficiently as a system. The flooded-type shell and tube cooler and the condenser are mounted above a rugged Vilter VMC compressor. Shipped assembled, the Uni-Chiller arrives with all interconnecting piping completed, controls factory wired, cooler and low-temperature piping insulated and a holding charge of refrigerant.

Motor and starter can also be supplied by Vilter and if desired, the compressor and motor can be run-in and all controls and gauges properly adjusted and set. By specifying a completely assembled unit, installation costs and start-up time are reduced . . . real savings to you.

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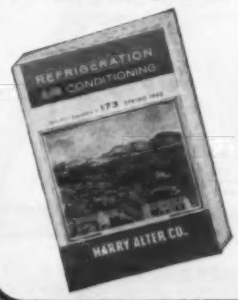

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Service Diagnosis for a Complex System (2)

The complex air conditioning system designed to provide conditions vital in the test launching of the Titan Intercontinental Ballistic Missile was described in the May 25, 1959 issue of the NEWS.

Because of its important function, an operations manual was prepared giving explicit instructions on its operation and maintenance. Since proper diagnosis of service problems is so important in this system, the NEWS believes the "Trouble Diagnosis" Chart for the system will be of interest and assistance to all those who service any type of air conditioning system. This is Part 2 of the series.

Operating Pressures TOO HIGH or TOO LOW

Observation	Possible Cause	Remedy
d. High discharge pressure	Condenser inlet temperature too high	**1. Increase quantity by replacing fan pulleys** **2. Obtain cooler air; avoid restrictions to flow**
	Plugged or scaled tubes in condenser	**Wash tubes with high pressure hose**
	Discharge shut-off valve partially closed	**Open the valve**
	Too much refrigerant	**Remove excess**
	Air in system	**Purge**
e. Low discharge pressure	Excessive air flow through condenser	**Adjust air regulating shutters**
	Suction shut-off valve partially closed	**Open the valve**
	Leaky compressor suction valves	**Pump down, remove the cylinder head, examine valve discs and valve seats, replace if necessary**
	Worn piston rings	**Replace if worn**
f. Flooding	Defective or improperly set expansion valve	**Reset to 5°-6° superheat**
g. Low suction	Insufficient refrigerant in system	**Add refrigerant**
	Excessive superheat	**Reset expansion valves**

SYSTEM NOISES

Observation	Possible Cause	Remedy
h. Compressor noisy	Loose or misaligned coupling	**Check alignment and tightness**
	Insufficient clearance between piston and valve plate	**Replace worn parts**
	Motor or compressor bearings worn	**Replace bearings**
	Loose or misaligned belts	**Check alignment and tension. Belt slack should be at the top**
	Loose foundation bolts or hold down bolts	**Tighten bolts**
	Foundation improperly isolated	**Check foundation to see if any part of it extends down to main floor**
	Improper support or isolation of piping	**Provide sufficient right angle bends in piping to absorb vibration and support firmly with suitable hangers**
	Slugging due to floodback of refrigerant	**1. Check setting of expansion valve** **2. Check thermal bulb for looseness and correct location**
	Hydraulic knock due to excess of oil in circulation	**1. Remove excess oil** **2. Check expansion valve for floodback**
	Noise level varies with unloading due to defective valve lifter mechanism	**1. Replace stuck lifter pins** **2. Check unloader fork for alignment** **3. Check power element for stuck piston** **4. Leakage of oil at tube connection to power element** **5 Check amount of valve pin lift above valve seat. It should be at least .33 in. for 5F and .125 in. for 5H**

(To Be Continued)

For a better understanding of the "Trouble Diagnosis Chart," a brief description of the system will be useful.

The system is designed to dehumidify the air by cooling it to -10° F. or 40° F. as required, using mechanical refrigeration. The air is then reheated to 40° F. for use for cooling or heated to 120° F. for use in heating when the ambient temperature is below 40° F.

Flow of air is automatically controlled at 180 lbs./min. of recirculated air plus 70 lbs./min. of fresh air. A manual adjustment located on the instrument panel permits pre-selection of any other proportion of air.

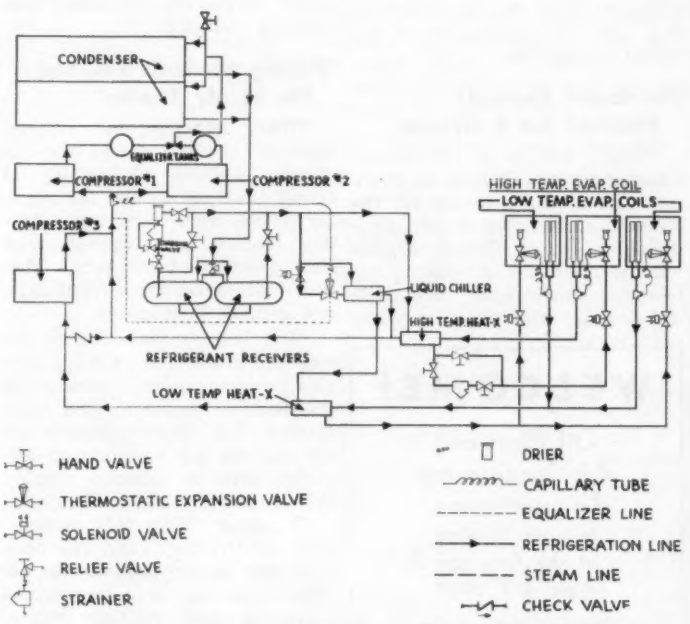
Cooling effect is supplied by a two-stage refrigerant system, composed of one 12-cylinder low-stage compressor, directly connected to a 50-hp. motor, and two 8-cylinder high temperature compressors each directly connected to a 60-hp. electric motor.

Other parts of the assembly include a 12-ton liquid cooler, a two-section air-cooled condenser mounting four 47-in. 4-blade propeller fans belted to two 10-hp. electric motors.

Prime air mover is a 60-hp. direct-drive positive-pressure blower selected to move 250 lbs. of air/min. against a 40-in. water external static pressure.

The coil section includes a cooling evaporator section containing two 16-row low temperature coils and one 12-row high temperature coil together with an air diverter valve, three expansion valves, and a two-row steam heat and reheat coil. Heat is supplied by an electrically fired steam generator designed to heat 175 lbs. air/min. from -20° F. to 120° F.

* * *



COOLING CYCLE CIRCUIT and valving for the complex air conditioning system used for test launchings of "Titan" missile is shown in the above drawing.

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keep operating efficiency UP

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ANCO Condenser Cleaner removes scale and rust from condensers within 2 to 15 hours, depending on scale thickness and composition. Following application, head pressure drops to normal and the condenser's efficiency is restored. Simply dissolve this dry formula in sump while system operates. It works quickly and safely and is equally effective in evaporative condensers and those with separate cooling towers.

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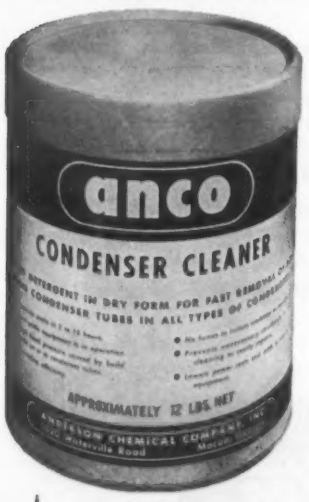

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$250,000 Expansion To Boost Electromode Potential 35%

ROCHESTER, N. Y. — Electromode Div. of Commercial Controls Corp. has announced a $250,000 expansion program for 1960 which will increase the electric heater manufacturer's production potential by 35%.

Robert E. Pequignot, vice president and general manager of Electromode, said the major part of the expansion will be embodied in a new centralized packaging and warehouse building which will add almost 20,000 sq. ft. of space to the present 80,000-sq. ft. plant.

Completion of the building will make realignment and enlargements of assembly lines possible in the main building.

A motorized belt conveyor will connect seven final assembly lines to the new building. Shipping cartons and filler components will be stored on the lower level of the building. Automatic conveyors will raise the cartons to the upper level where finished heaters will be packaged and stocked.

Special railroad and truck trailer loading bays will be built into the south end of the new building which will form a long rectangle at the northeast corner of the present plant. The truck bay will permit major-shipment loadings without blocking any of the six shipping bays now in use.

Electromode, which marked its 30th anniversary in 1959, manufactures more than 300 models of electric heaters for home, farm, and industry.

Components Sales Operation Set Up By General Electric

FORT WAYNE, Ind. — To more effectively and efficiently serve manufacturers in the home, farm, commercial, and light industrial markets, General Electric Co. has established a Components Sales Operation with headquarters here.

A. W. Bartling

Arthur W. Bartling, formerly manager of specialty sales in the company's Apparatus Sales Div., Schenectady, N. Y., has been named manager of the new operation.

Bartling will direct a national field sales and service organization that will sell components incorporated by manufacturers into such items as room air conditioners, home heating and cooling equipment, home laundry, domestic and small industrial fans, blowers and pumps, office devices, and portable tools.

The operation will handle the majority of the products manufactured by the Component Products Div. as well as component-type products of other divisions of the company.

L. J. Wing Names Adolph R. Schaub

LINDEN, N. J.—Adolph R. Schaub has been named manufacturing manager of the L. J. Wing Mfg. Co. here, a division of Aero Supply Mfg. Co., Inc.

A. R. Schaub

Schaub comes from M. W. Kellogg Co., which he joined in 1939. At Kellogg he served in project engineering, purchasing, and production management capacities. Most recently he was production manager and shop superintendent for Kellogg at Jersey City, N. J.

On All Units

100% Run-In Tests Reduce Field Failures

By Frank J. Versagi

GREENVILLE, Mich.—Four hours are spent testing and running-in every air conditioner and refrigerator produced here and in Gibson Refrigerator's Belding plant, H. E. Rosebrook, vice president in charge of engineering, told the NEWS here.

"There is no doubt in our minds but that 100% run-in tests have greatly reduced the incidence of field failures on our units," Rosebrook said, "and the savings are easily enough to justify the cost of such extensive testing."

Taking the NEWS through the air conditioner and dehumidifier plant at Belding, Robert Wilkie, chief process engineer of that plant, explained that the air conditioners are running three hours continuously before they enter the test room proper.

"This running-in is to break in the compressor, and it allows us to determine if there are any gross defects on the unit. The 3-hour run-in also gets the unit's several components to proper temperatures before they enter the test room."

In the test room, which is conditioned with air having a 40° dewpoint to prevent water formation on the evaporator coil, recording instruments check inlet air temperature, wattage, dry-bulb drop, and the high side for refrigerant leaks which may have escaped previous leak testing. Wilkie describes Gibson's test setup as "the most elaborate" he has encountered in the industry.

Just outside the test room, the units are subjected to low voltage starting tests and to leak detection on the low side. Any units rejected during any of the tests are re-routed through the "repair hole" and then through the entire testing operation again.

One hundred twenty air conditioners pass a given test station each hour. Before leaving the test room, the units are run with fan only to get the evaporator warm enough to prevent condensation when the unit enters the normal plant atmosphere.

Equally impressive is the refrigerator test arrangement. Four hundred refrigerators move slowly through the testing room on a conveyor while instruments and personnel test them for running time, noise, wattage, operation of cold control, efficiency, temperature.

The units are run continuously for two hours before going through two more hours of metered run-in under operating conditions.

"If this conveyor ever stops accidentally, a real panic button is pushed!" offered Francis Ribard, chief process and specifications engineer for the refrigerator plant in Greenville.

"The alternative to 100% testing is statistical testing of component parts and of the finished assemblies," Rosebrook explained. "Some companies will 100% test certain components and spot check the finished units. Most do this on the theory that the cost of 100% run-in and inspection on the finished units would be prohibitively costly for the benefit derived."

Wilkie added that "Most companies would have to add only a man or two to their operation. After all, they have on hand at least leak detector operator, and people to observe the unit for appearance. We use these people and one or two others to conduct the full run-in testing. The added cost in power used and in factory space consumed is well worth it, we have found."

Still another Gibson executive suggested that the demise of a couple former air conditioner producers may well have been due to their discovering their manufacturing defects after they had sold the units. I do not think it coincidental that their testing facilities were inadequate by any standards.

"A major advantage of 100% testing," Rosebrook and Wilkie agreed, "is the psychological and practical effect it has on the entire production operation. On those occasions when word got around that units were being rejected during run-in, plant personnel tighened up their operations and quality control to be sure that their particular function was not the one at fault."

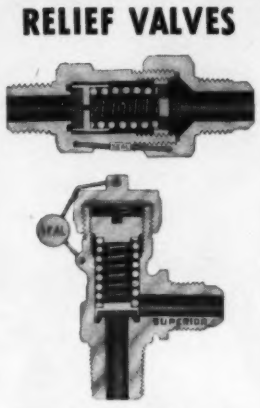
Clamp Holds Temp. Control Bulbs

DOVER, Ohio — Commercial Machine & Welding Co.'s new patented bulb clamp is now in production, according to Albert J. Dalpiaz, clamp sales manager.

Dalpiaz added that the Danville Div., Bohn Aluminum & Brass Corp., Danville, Ill., is using this clamp on its production line to hold temperature control bulbs and also as a conduit clamp.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

NEW, APPROVED RELIEF VALVES



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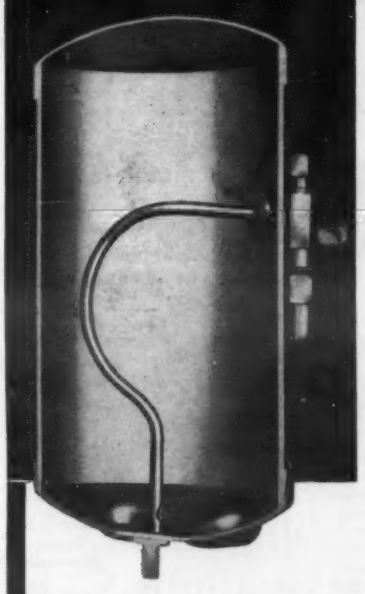

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TECH CENTER

by Frank J. Versagi, Technical Editor

Applied Electrical Theory (Part 13)

Induction Motors (a)

For those who have forgotten the basic rules of magnetism, it is well to precede the discussion of induction motors with a very brief review of a pertinent phase of that subject.

Magnets are said to possess two poles, usually designated North and South because of the property a magnetic compass needle has of aligning itself in a north-south direction.

If a bar magnet is brought close to a compass, Fig. 1, the magnetic needle will either be attracted to or repelled from the magnet, depending on which end of the free magnet is brought near.

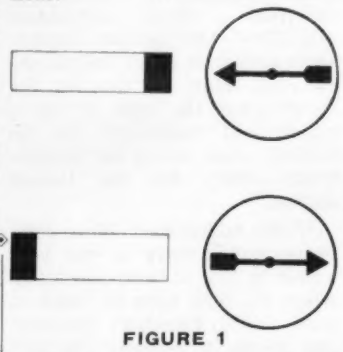

FIGURE 1

The basic principle induced from this and similar experiments is that **unlike magnetic poles attract each other; like poles repel each other.** Bring a North pole close to another North pole and the magnets will tend to push apart. Bring an S pole close to an N pole and the magnets will draw together. Bring an S pole close to another S pole and the magnets will again repel each other.

If one of the magnets were mounted on a pivot, it could be made to rotate either by pulling it around with an unlike pole or pushing it around with a like pole—the movement of the free magnet being performed manually.

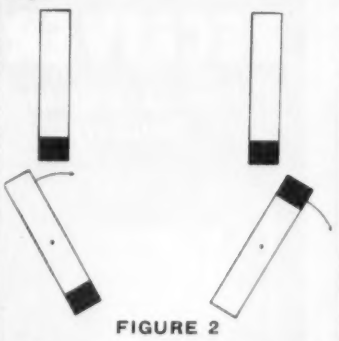

FIGURE 2

The same phenomena can be repeated if one of the permanent magnets is replaced with an electromagnet as in Fig. 3.

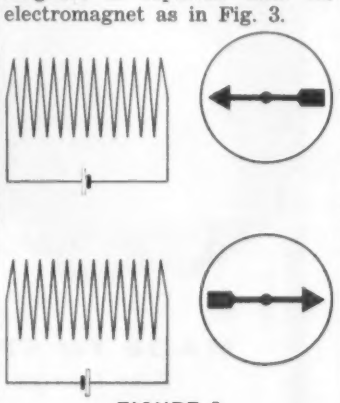

FIGURE 3

To operate an induction motor, then, we must somehow get the equivalent of a pivoted magnet to rotate, and we must somehow produce the equivalent of the manual motion of a second magnet.

* * *

Fig. 4 is a schematic representation of three stationary coils connected to a three-phase power supply. 3ϕ power is such that current flows strongly in line 1 first, then in line 2, then in line 3, back to line 1, etc.

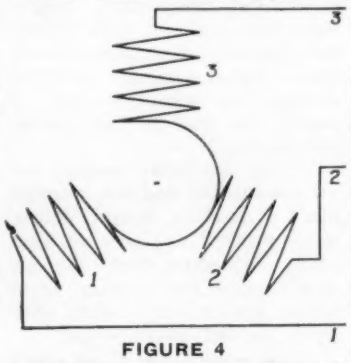

FIGURE 4

Recalling that every flow of current induces a magnetic field, it can be seen that as the current increases and decreases in each coil, the induced magnetism also increases and decreases. And, as the current strengths rotate from 1-to-2-to-3-to-1, so do the magnetic strengths. In effect, without actual mechanical motion, we have created a **rotating magnetic field** in the non-moving part of the motor called the **stator.**

As the alternating current flows through the stator windings, Fig. 5, the magnetic poles alternate in step with the alternations of the current. In the photograph, the wire coils are placed in such a manner as to make the segmented and laminated **pole pieces** N and S poles in rotating succession as the current flows.

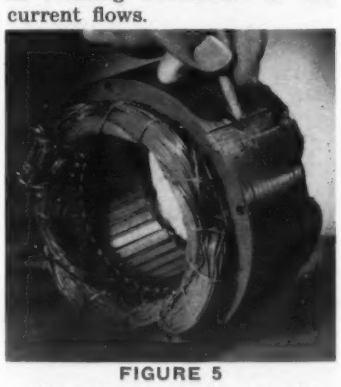

FIGURE 5

The principle of the induction motor then: the magnetic field rotates as the current proceeds through its alternations.

It becomes necessary now to have a rotating member, a **rotor,** to convert the energy of the rotating magnetic field into usable mechanical energy.

The most common induction motors make use of a **squirrel cage rotor,** the name given because of the cage-like appearance of the rotor, Fig. 6.

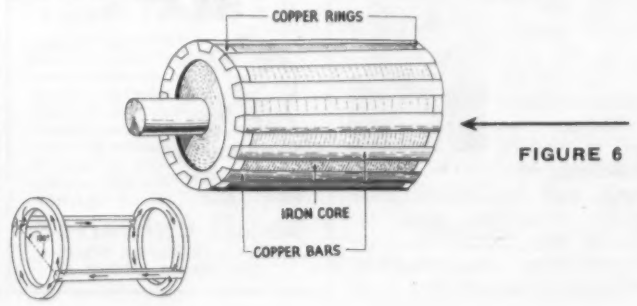

FIGURE 6

An Unanswered Question

Several electrical authorities have been unable to answer the following submitted question:

What is the 3-phase, 220-volt system which has one circuit which they call a silent circuit and you are unable to get a ground off either circuit, that is 110-volt. This is on a bulk gas station and several people have been called out who don't know anything about it.

Any ideas?

The rotor consists of a cylindrical core made of multiple laminations of easily magnetized metal. Copper or aluminum bars are embedded in the core and both ends of the bars are bonded to a copper or aluminum ring. Each bar has another exactly opposite it and each set of bars, attached to the rings, forms a closed loop in which current can flow, exactly as if each loop were formed of coils of wire instead of solid metal.

If the rotating member of a motor consists of wound loops of wire and a commutator, it is called an **armature,** rather than a rotor, Fig. 7.

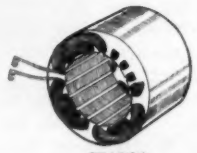

FIGURE 7

Because an induction motor operates on the principles of self and mutual induction, it is often compared to a transformer. In such a comparison, the stator winding of the motor is thought of as the primary of a transformer, and the rotor or armature is considered a movable or rotating secondary.

Current is induced in each loop of the rotor by the magnetic field in the stator. This induced current in turn produces its own magnetic effect, creating poles opposite, at any given moment, to those in the stator pole immediately across the **air gap** between the rotor and the stator.

FIGURE 8

The current and magnetism induced in the rotor are always just a little behind those of the rotating magnetic field in the stator. This continually changing momentary juxtaposition of the resulting poles accounts for the forces of attraction and repulsion which cause the rotor to follow, and attempt to keep up with, the rotating current and field in the stator.

Oversimplified, the rotor movement can be explained by there being always a N pole on the stator pulling a S pole on the rotor while at the same time a S pole on the stator is pushing from behind.

file guide—ELECTRICITY: motors

Next: INDUCTION MOTORS—Continued

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

● FULL FLOW
✻ SELF ADJUSTING
● POSITIVE SHUT-OFF
✻ LEAK-LOK BONNET SEAL
● REPACKS IN USE
✻ TEMPERATURE PROOF

KEROTEST PACKED GLOBE VALVES

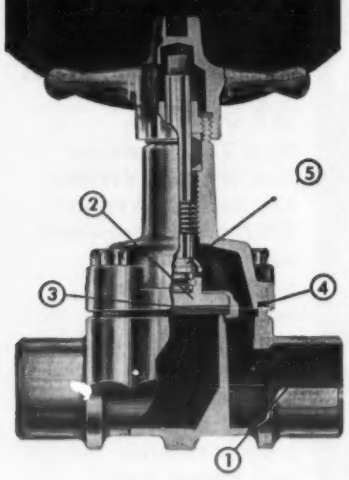

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Photo on Location by Ehrenberg

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AIR CONDITIONING, HEATING & REFRIGERATION NEWS

You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry.

Two questions were submitted by E.S.J. of Glassport, Pa. The answers are supplied by Art Perez, chief administrative engineer, Tyler Refrigeration Corp.

Q. How many B.t.u. per hour will pass through a double glass window 3 ft. by 6 ft. if the TD is 40°?

Solution

Readily available published tables (ASRE Data Book) give the heat gain through one square foot of double glass pane as 11 B.t.u./24 hr. TD.

So, $40 \times 11 = 440$ B.t.u./24 hrs./sq. ft.
And, $3 \times 6 = 18$ sq. ft. Total area
Therefore, $\frac{440 \times 18}{24} =$ B.t.u.h.

Q. A 15 ft. by 10 ft. cooler is used for storing and supplying the trade with 2 tons of apples, 1 ton of grapes, and 1 ton of oranges per day. The cooler is located in a 90° F. room and is maintained at 36° F. with 4 in. self-supporting corkboard walls and ceiling and a 6-in. concrete sub-floor overlaid with 4-in. corkboard and a 3-in. wearing floor. What will be the estimated refrigeration load (based on 15 hours per day running time?). Two men are working in the cooler six hours daily. Products come in at 65°. There are two 100 watt light bulbs in the cooler. Walls and ceiling have ½ in. plaster on each side. Figure heat of evolution the same as 40° F. storage. For air change load, figure outside air at 50% R.H.

Solution

Presuming 15 ft. by 10 ft. is inside dimensions. Practical calculations follow:

4 in. corkboard @ K of .29
Occupant heat 900 B.t.u. Ea.
100 W. lamps 3.41 B.t.u./W

Apples	specific	heat	.86
Grapes	"	"	.86
Oranges	"	"	.90

Heat of respiration / 24 hrs.	
Apples	830
Grapes	830
Oranges	795

1. Assuming 8 ft. room height (not given) leakage is as follows:

Sq. Ft. × TD × .29 Div.	by	Insul./Thick		B.t.u.h.
2 walls 8x15x2 =	240x44°	4	=	765.6
2 walls 8x10x2 =	160x44	4	=	510.4
Floor 10x15x1 =	150x44	4	=	478.5
Ceiling 10x15x1 =	150x44	4	=	478.5
				2,233.0

2,233x24 = 53,592/B.t.u./24 hrs.

2. Other heat loads
Lights 200 W. × 3.41 × 24 = 16,368/24 hrs.
2 men 900 B.t.u.h. = 1,800 B.t.u.h.
2 × 900 × 24 = 43,200
16,368 + 43,200 = 59,568

3. Product Load
4,000# Apples × .86 × 25 = 86,000
2,000 Grapes × .86 × 25 = 43,000
2,000 Oranges × .90 × 25 = 45,000
174,000 B.t.u./24 hrs.

4. Heat of Respiration
Apples 830
Grapes 830
Oranges 795
2,455 B.t.u./24 hrs.

5. Service Load
10 ×15 × 8 = 1,200 cu. ft.
Based on 15 air changes /24 hrs. @ 2.17 B.t.u./cu. ft.
1,200 × 15 × 2.17 = 39,060 B.t.u./24 hrs.

Total Item 1 = 53,592
2 = 59,558
3 = 174,000
4 = 2,455
5 = 39,060
328,665 B.t.u./24 hrs.

$\frac{328,665}{15} = 21,911$ B.t.u./hr. for 15 hrs. R.T.

The above does not take into account possible sun exposure effect or unknown values for the type cement or plaster aggregate used. The effect of these, however, would be negligible.

Century Electric Reorganizes National Sales Force

ST. LOUIS—Century Electric Co., manufacturer of motors and generators, announced the reorganization of its national sales force into six major divisions.

Each of the divisions will be headed by a divisional sales manager, reporting directly to George Henderson, general sales manager.

Gunar Moe has been appointed Northeast Div. sales manager. He was formerly in charge of the New York branch.

Fred Powers has been appointed sales manager of the Southwest Div. He will work out of St. Louis.

William D. Helm, former manager of the Chicago branch office, was appointed sales manager of the Midwest Div. James H. Bolton, formerly located in the Cincinnati branch office, was assigned the job of sales manager, North Central Div.

James S. Smith, former manager of the Baltimore office, was appointed sales manager of the Southeast Div. Western Div. offices will report directly to George Henderson, general sales manager in St. Louis.

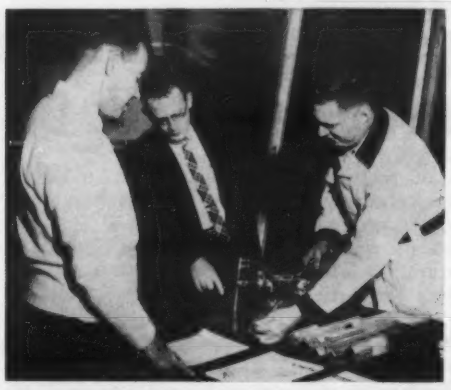
"The newly-reorganized divisional sales force will give Century sales operations greater flexibility and will offer better and quicker sales and engineering services for Century customers," it was stated.

Copeland Names Ernest Kroder

SIDNEY, Ohio — Ernest Kroder has been appointed chief engineer of the standard products line by Copeland Refrigeration Corp., E. T. Neubauer, vice president - engineering, has announced.

E. Kroder

Kroder was formerly associated with the Lehigh Mfg. Co. as general manager, special products, the Keeny Mfg. Co., and the Bridgeport Brass Co. He is a graduate of the Bridgeport Engineering Institute.



LIGHT and compact spot-welding gun fuses aluminum to galvanized iron in Chase Brass & Copper Co. exhibit at company's New York warehouse.

Application of Aluminum Duct Sheet Demonstrated In N. Y. by Chase Brass

NEW YORK CITY—A daily demonstration of the application of aluminum duct sheet for heating, ventilating, and air conditioning systems was presented during a recent period by Chase Brass & Copper Co., at the company's New York warehouse, for engineers, contractors, and sheet metal fabricators.

Qualified personnel answered questions and showed the ease with which aluminum duct sheet can be handled, prefabricated, and transported to the job-site, the company reported.

Roll forming, spot welding of aluminum to galvanized iron, metal stitching of aluminum to aluminum or other materials, and the soldering or low temperature brazing of aluminum to aluminum were some of the techniques demonstrated.

Visitors were informed that aluminum duct sheet meets the strength requirements of FHA (Bulletin UM 23, Section 8) and the Bureau of Fire Underwriters (Bulletin 90B).

It also was pointed out that aluminum duct sheet is of standard thicknesses, widths, and lengths commonly used by the industry. Duct sheet may be formed into 180° bends over one half metal thickness radius and will make all other types of joints common to the trade, it was noted.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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ASHRAE Paper Doubting Humidity's Role In Comfort Arouses Much Discussion

DALLAS—Dismissal of relative humidity as an important factor in human comfort aroused much discussion when an ASHRAE laboratory study was described at the society's semi-annual meeting here.

The research was described in a paper entitled "Environmental Study II—Sensation Responses to Temperature and Humidity Under Still Air Conditions In the Comfort Range," which had been prepared by C. M. Humphreys, Walter Koch, and B. H. Jennings of the laboratory staff.

Essentially, the paper as presented by Humphreys questioned the importance of humidity only within the rather sharply confined limitations of the study.

"We don't suggest that engineers ignore relative humidity," Humphreys replied to an engineer's criticism.

The two "conclusions" of the paper actually read as follows:

"1. Lines of equal thermal sensations for continued occupancy have been determined which are applicable to sedentary (inactive) individuals, lightly clothed in still-air conditions, in a uniform radiant environment with the temperature of the surroundings maintained approximately equal to the air temperature.

"2. The line of optimum comfort for both winter and summer is approximately straight and ranges from 77.6° F. at 30% relative humidity to 76.5° F. at 85% relative humidity. It is only slightly dependent on humidity."

No suggestions were offered in the paper as to what the results might be under other conditions such as, for example, at relative humidities of well under 30%, which are generally believed to prevail frequently in many spaces during winter.

Because some of the tests were run during the summer, the laboratory found it virtually impossible to maintain controlled humidity conditions much below 30%, it was later disclosed.

The study was conducted in the environmental laboratory in the ASHRAE research laboratory in Cleveland. Three groups of high school graduates and college students, numbering 20 in all, served as subjects of the tests.

They were required to report their impressions on a number of scales, including thermal sensation, sensation of humidity, sensible perspiration, pleasantness, air motion, and sensation of warmth or coolness from surrounding surfaces.

The scales, admittedly arbitrary, involved seven points for thermal and humidity sensations. Thermal scale ranged from "cold" to "hot"; humidity scale ranged from "painfully dry" to "wet." Optimum point on the thermal scale was "comfortable"; on the humidity scale, "normal."

Noted also in the paper is the apparent gradual increase in optimum winter temperature over the past several years.

"This . . . is probably due primarily to the lighter winter clothing now being worn. This change in clothing is undoubtedly the result of the widespread improvements in heating in this country," suggest the authors of the paper.

Torrington Appoints Kenneth A. Merz

TORRINGTON, Conn. — Kenneth A. Merz has been appointed engineering manager of the Air Impeller Div. of The Torrington Mfg. Co., producer of fans, blower units, and wire - forming machinery.

K. A. Merz

Replacing C. A. Hathaway, who has been made assistant general manager of the division, Merz will supervise all design and development of impeller products, the company's air and sound laboratory testing services, and application engineering.

Merz has been assistant chief engineer for three years and, in addition, was last year appointed production engineering manager.

Friedrich Elects R. W. Jones, Jr. Vice President

SAN ANTONIO — R. W. Jones, Jr., formerly sales manager of the Air Conditioning Div. of Friedrich Refrigerators, Inc., was named recently as vice president in charge of air conditioning sales by the Friedrich board of directors.

R. W. Jones

According to Reese Harrison, president of Friedrich, Jones will be in charge of national sales programs of all air conditioning manufactured by the 77-year-old San Antonio factory, including both window units and central installations.

Jones, a graduate of the University of Texas, has been associated with Friedrich since it first started manufacturing air conditioning units in 1952. Production has been steadily and substantially increased every year to meet rising sales, it was stated.

The company added: "Friedrich air conditioners are in use from Texas to Taipei, Formosa; from Kuwait and Qatar on the Persian Gulf to Panama; in French West Africa and in the Belgian Congo."

The 5-acre Friedrich factory is at 1117 E. Commerce, in San Antonio.

Airtemp Distributor Advisory Committee

SEVEN DISTRIBUTORS for Chrysler Corp.'s Airtemp Div. met with Chrysler executives in the first of three meetings scheduled for 1960 to discuss future planning and solve mutual problems. Front row, left to right, are Marty Rothman, M. Rothman & Co., Cliffside Park, N. J.; I. C. Goldstein, Globe, Inc., Minneapolis; and Stan H. Kelly, H & C Supply Co., Akron, Ohio. Standing are, left to right, Sterling Nicholson, Southeair Co., Durham, N. C.; George C. Webster, Wilson Supply Co., Inc., Washington, D. C.; Joseph B. Ogden, vice president of sales for Airtemp; Roy R. Matthews, Royalair Distributors, Dallas; and Sydney Anderson, manager of Chrysler's Los Angeles branch. Some of the topics discussed at the meeting included new products, shipping, advertising and sales promotion campaigns, pricing, and plans for next fall's national conference

Public Transportation

Air Conditioned C&NW Commuter Trains Scheduled for Delivery In September

CHICAGO — First deliveries under a $21,000,000 program for conversion of Chicago & North Western Ry. commuter trains to double-decked, air conditioned streamliners are scheduled for September, with subsequent deliveries at the rate of approximately 10 coaches a month.

The purchase order for the new equipment is the largest of its kind ever placed by an American railroad, according to company officials. All of C&NW's conventional suburban coaches will be retired as obsolete.

The order calls for the conversion of 45 locomotives and the building of 116 new double-deck coaches. These will supplement 36 similar coaches ordered last year at a cost of $6,000,000 and 48 others purchased during the last four years.

All the coaches will have air conditioning, electric heat, and fluorescent lighting. Safety glass in the windows will be heat absorbing and tinted to reduce glare.

●

Detroit Will Not Buy More Air Conditioned Buses—Now Has 10 for Test Purposes

DETROIT — The Detroit Street Railways (DSR) Commission has turned thumbs down on installing air conditioning equipment in the additional new coaches it will buy during the current year.

Ten of 50 new buses delivered in February were equipped for air conditioning. The commission last summer had voted to test 10 air conditioned buses on express lines.

But Samuel T. Angott, president, and Adolph Delue, DSR Commission member, recently voted against more air conditioners. Not present at the meeting was Commissioner William Gershenson, who has been an ardent booster of bus air conditioning.

●

Virginia Transit Putting 15 Air Conditioned Buses In to Service—'Necessity, Not Luxury'

RICHMOND, Va.—At a cost of approximately $500,000, Virginia Transit Co. will put 15 new air conditioned buses into operation March 18.

Kermit A. Blanks, Richmond division manager, said air conditioning and heating will be through small vents under each window.

"It appears that eventually the entire VTC fleet will consist of air conditioned buses," he added.

VTC has had one air conditioned bus in operation since July, 1957.

"Air conditioning," Blanks said, "is getting to be a necessity rather than a luxury."

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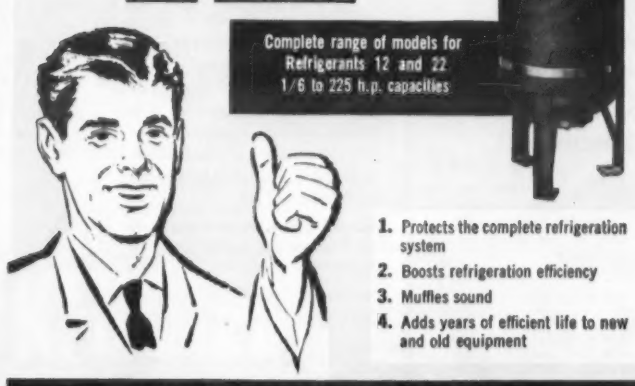

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450 W. Fort St., Detroit 26, Michigan

Interest in the Aseptic-Air system indicates that it may have a widespread application in hospitals, other types of institutions, and in certain types of industrial plants, states Reginald Robbins, one of the principals in its development.

Since considerable care must be taken in the design and installation of air conditioning systems with which an Aseptic-Air system is used, Robbins is seeking contact with consulting engineers specializing in air conditioning, and with air conditioning contractors (primarily in the larger metropolitan areas). Those who are interested can write Reginald Robbins, P.O. Box 49856, Los Angeles, describing the nature of their interest, and their qualifications.

GERMLESS AIR in high volume at low velocity filters downward through perforated ceiling plenum and through perforations in surgical light above operating table in Los Angeles Mount Sinai hospital. Room is held under slight positive pressure.

HERE ARE 36 BALLASTS which control the ultraviolet germicidal tubes within the baffled Robbins Aseptic-Air chambers used at Mount Sinai hospital.

SMALL GERMICIDAL unit at St. John's hospital, Santa Monica, Calif., supplies essentially germless air to incubators. No air conditioning is involved. Amount of entering air is controlled by incubator and is pre-set by attending nurses.

'Aseptic-Air' Stops Infection--

(Continued from Page 1, Col. 5)

destined nose cones.

A small three-lamp console capable of sterilizing about 300 c.f.m. of room air is now being built by Howard-Helfman Co., Los Angeles, to sterilize waiting room air in doctors' offices.

Howard-Helfman builds the chambers and made the installation at Mount Sinai.

A low-cost unit for home use is in the planning stage, it was indicated.

How System Works

Explaining how the system works, Finkelstein said that the aseptic condition is achieved by exposure of all bacteria in the air to high intensity ultraviolet radiation at very close range.

"Irradiation takes place in a cylindrical aluminum chamber, 36 in. long and 7½ in. in diameter, whose inner surface is highly reflective for radiation in the germicidal ultraviolet range," he said.

"Inside this chamber is a baffle which induces turbulence and directs the air in a cyclonic pattern. This insures complete exposure of all airborne particles to the lethal rays emanating from the ultraviolet arc which extends lengthwise through the chamber.

"One such chamber, operating at an airflow of 100 c.f.m., will kill in excess of 99.9% of micro-organisms in a single passage.

"The high effectiveness of this system is attained by insuring that no micro-organisms passing through the chamber is more than 3 in. from the ultraviolet tube.

"Effectiveness of radiation in free air is inversely proportional to the square of the distance of the target from the source of germicidal energy. (Thus the ultraviolet arc in the chamber would have 256 times the effect of the same arc attempting to kill germs 4 ft. away.)

"Continuous recirculation of operating room air through the ultraviolet system insures constant decontamination."

The germ-killing unit containing the 72 ultraviolet chambers is 6½ ft. high, 6½ ft. wide, and 7 ft. long. It is installed in a utility room adjacent to the surgeries.

Some 10,000 c.f.m. of air is drawn into a basement plenum chamber by a No. 4 Utility squirrel cage fan driven by a 7½-hp. motor. There it first passes through a Minneapolis-Honeywell electrostatic filter rated at 90% efficiency and then is ducted through Farr HP-2 filters.

Filtered air is then channeled through the ultraviolet chambers. Sterilized, it enters a double duct system.

In the cold duct, a chilled water coil chills the air to 56° F. and a steam grid humidifier restores proper relative humidity. Steam coils in the hot duct raise temperatures as high as 110° F.

Thermostatically actuated pneumatic controls operate a pair of mixing dampers to maintain temperatures between 70 and 80° F. in operating room.

Mixed air flows both into the ceiling plenum and into the surgical light housing over the operating table. Before the installation of the Aseptic-Air system, air was distributed in each operating room through two ceiling diffusers. Now the diffusers have been removed.

Output from one is baffled to distribute air evenly throughout the ceiling plenum. Output from the other is carried by two flexible hoses to the surgical light hanging over the operating table.

Drilled Holes In Lamp

The lamp's nearly 4 ft. dia. glass lens is drilled with holes through which germ-free air is diffused downward. This curtains the operating table with sterilized air, washing germs from the patient, operating table, and surgical personnel.

Because air volume was increased from 6,000 c.f.m. before the Aseptic-Air installation to 10,000 c.f.m. a third duct had to be added. This one discharges its air into the ceiling plenum.

The plenum is formed by perforated aluminum T-sections hung 6 to 8 in. below the ceiling. Despite the additional volume of air, velocity through the perforations has been cut to 20 f.p.m., virtually eliminating drafts. Yet the higher air volume permits more frequent air changes to eliminate contaminants.

Unlike most operating rooms, those at Mount Sinai are kept under a slight positive pressure, to prevent infiltration of germ-laden outside air. Normally, the fear is that germs from the operating room will get into the rest of the hospital.

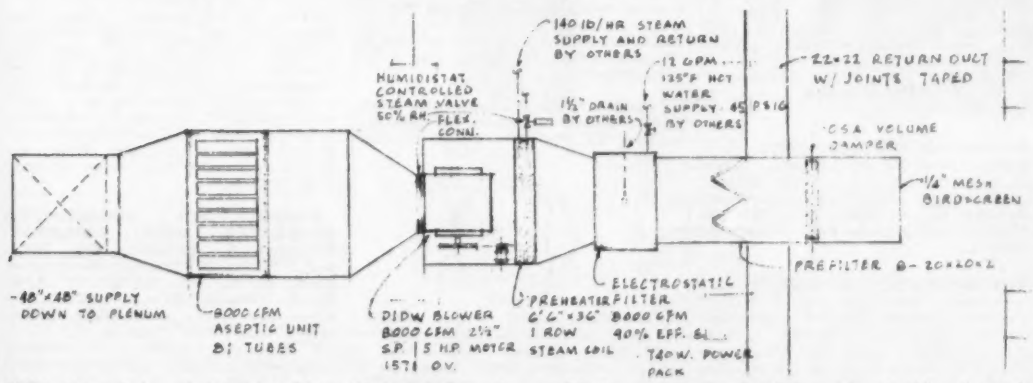
In addition to many tests at Mount Sinai, the Robbins Aseptic-Air system was also tested by Dr. William R. Romig, associate professor of bacteriology at the University of California at Los Angeles.

In addition to staphylococci, Dr. Romig tested the efficiency of the system with other potentially pathogenic bacteria, such as streptococci.

Dr. Romig reported that the amount of ultraviolet intensity produced is more than adequate to kill and remove such additional infecting agents as tuberculosis and viruses including influenza and poliomyelitis.

Carefully controlled tests showed a lethal effectiveness of more than 99.9% with air heavily contaminated with bacteria.

* * *


140 ID/HR STEAM SUPPLY AND RETURN BY OTHERS
12 GPM 135°F HOT WATER SUPPLY BY OTHERS
45 PSIG
HUMIDISTAT CONTROLLED STEAM VALVE 50% RH
FLEX. CONN.
1½" DRAIN BY OTHERS
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CSA VOLUME DAMPER
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PREFILTER 8-20 HOLOX
ELECTROSTATIC PREHEATER FILTER 6'6"×36" 8000 CFM 1 ROW 90% EFF. 6L
STEAM COIL
T&W. POWER PACK
DIDW BLOWER 8000 CFM 2½" S.P. 15 H.P. MOTER 1571 O.V.
8000 CFM ASEPTIC UNIT BY TUBES
48"×48" SUPPLY DOWN TO PLENUM

PLAN of Aseptic-Air unit being installed at Wadsworth General hospital in West Los Angeles shows how unit fits into air conditioning system for hospital wards. Provision is made for recirculation of about 75% of ward air.

Plan Seal--

(Continued from Page 1, Col. 2)

a poorly ventilated air conditioning system) as an example of the type of installation which did not bear the seal of a professional engineer.

Representatives of the Chicago Chapter said they had seen some city officials, but had been unable to see any top official of the City Building Department. It is the contention of the engineer's group that no new law or ordinance is necessary to require the engineer's seal on plans and drawings, and that it can be done by an order from the department.

The move by the engineer's group apparently came as a surprise to most elements in the air conditioning industry in Chicago, including contractors who employ engineers who are members of the society.

Some observers think that there is little chance that the City Building Department will get any consideration to the move, basing their opinion on past efforts to have stronger licensing laws enacted on air conditioning work. Others think that the effort to make the plan apply to all air conditioning, heating, and ventilating systems, including all residential work, makes it too all-inclusive.

Engineers working in the state of Illinois are licensed under the Illinois Professional Engineering Act. To take a qualifying examination for registration under the Act, an individual who has received a degree from an accredited engineering college must have had four years of practical experience. A man who does not have a college degree must have eight years of experience in engineer work. Full members in the Illinois Society of Professional Engineers must be registered under the state Act.

Carrier Strike--

(Continued from Page 1, Col. 4)

Representatives of management and the United Steel Workers Union are negotiating in an effort to settle the dispute which resulted in a strike of hourly rated workers on March 2, and also are working on a general contract with the union, which won recognition as the bargaining agent in a recent election in which it obtained 50.4% of the vote. Immediate effort is being made to end the work stoppage.

The walkout on March 2 followed disciplinary action brought against the president of the union local and four other members who the company said had been interfering with production by inducing employes to refuse to work overtime.

Contractor Seminar Set for March 17-18

SAN FRANCISCO—A seminar to which are invited all those in the industry who are interested, has been announced for Thursday and Friday, March 17-18, by the Northern California Association of the Mechanical Contractors Association of America.

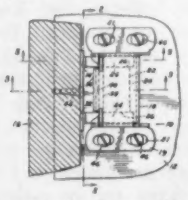
Stewart Davis Smith, secretary, said the seminar will be held at Hyatt House, San Mateo, located just north of San Francisco's International airport near Bayshore freeway.

Subjects to be covered are: insurance, types of contracting operation, human relations, certified pipe welding, statistical survey of the industry, equipment leasing vs. owning vs. renting, and a handling policy for mechanical contractor change orders.

PATENTS

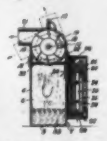
Week of Oct. 20 (Continued)

2,909,384. MAGNETIC DOOR CATCH. Millard F. Saxton, Flint, Mich., assignor to The Engineered Products Co., Flint, Mich.



18. A magnetic door catch comprising a non-magnetic housing provided with means for mounting the housing on a support, a magnet shiftably supported within the housing and having opposed poles at its opposite ends, a pole piece magnetically adhering to each pole of the magnet and each being bodily movable relative to the magnet, said pole pieces having edge portions thereof projecting outwardly of the housing. . . .

2,909,637. METHOD AND APPARATUS FOR TREATING AIR IN HOT AND COLD WEATHER. William R. Mobley, Miami, Fla.

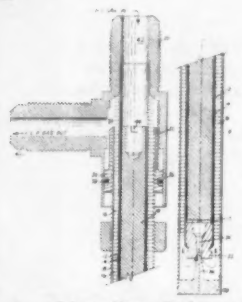


1. Means for treating air to create and maintain a comfort zone thereof in a ventilated room or enclosure, comprising a substantially closed and portable rectangular casing having front and rear walls and opposed end walls and an elongated horizontal air inlet opening in the upper end of said rear wall, a hinged cover member on said casing have closed end walls, a motor housed within said cover having a shaft. . . .

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

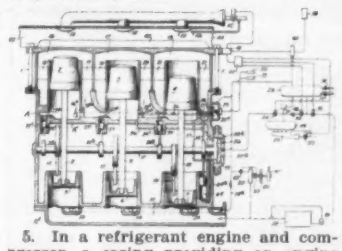
Week of Oct. 27

2,909,908. MINIATURE REFRIGERATION DEVICE. Alexis Pastuhov, Harvard, Mass., and Francis J. Zimmermann, Hamden, Conn., assignors to Arthur D. Little, Inc., Cambridge, Mass.



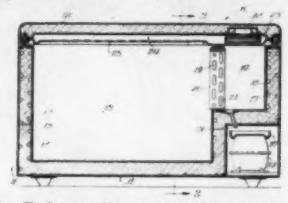
1. A refrigerating device comprising a heat exchanger including means forming two concentric paths in heat exchange relation with each other along substantially their entire lengths, each of said paths being in the form of a spiral passageway, entrance means at one end of said heat exchanger for introducing a gas at high pressure into the inner of said two paths. . . .

2,909,902. REFRIGERANT ENGINE AND WORK DEVICE. Alwin B. Newton, Wichita, Kan.



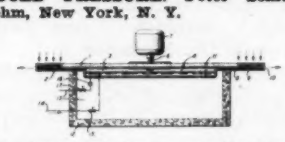
5. In a refrigerant engine and compressor, a casing providing an engine chamber and a compressor chamber, a plurality of pistons in each of said chambers and connected by shafts whereby the operation of an engine piston moves a compressor piston, a refrigerant in the chamber of the engine and the chamber of the compressor, means for heating the refrigerant for driving the engine pistons and thereby the compressor pistons. . . .

2,909,907. REFRIGERATING APPARATUS WITH HOT GAS DEFROST MEANS. Donald F. Swanson, St. Paul, Minn., assignor to Whirlpool Corp., a corporation of Delaware.



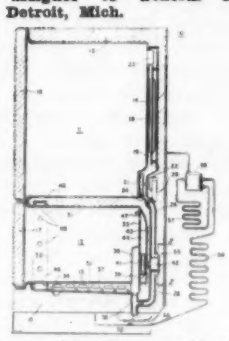
1. Refrigeration apparatus, comprising: a chamber; a first evaporator coil; a second evaporator coil, both coils being in heat exchange relationship with said chamber and normally maintained at freezing temperatures; a defrost coil in heat exchange relationship with said first evaporator coil; a refrigerant compressor having an inlet and an outlet; first conduit means connecting the outlet of the compressor to the first evaporator coil. . . .

2,909,909. APPARATUS FOR EVAPORATING A LIQUID UNDER REDUCED PRESSURE. Peter Schlumbohm, New York, N. Y.



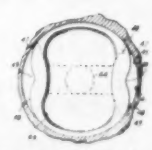
1. Apparatus for evaporating water as refrigerant, characterized by a water-filled evaporating pan, having a horizontal, plane flange section all around the edge of the pan; further characterized by an impeller disc mounted on a downwardly directed driving shaft concentrically over said pan. . . .

2,909,910. REFRIGERATING APPARATUS. Orson V. Saunders, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



9. In a refrigerator, a cabinet having a plurality of insulated walls defining a food storage compartment therein, a refrigerating system including a refrigerant evaporator for cooling said compartment, a blower for circulating air in said compartment over said evaporator, a motor for operating said blower, a conduit depending from said compartment through the insulation in a wall of said cabinet for draining condensate water out of the compartment. . . .

2,910,093. SIDE WALL FLOW CONTROL. Robert R. Dahl, Chicago, Ill., assignor to The Dole Valve Co., Chicago.

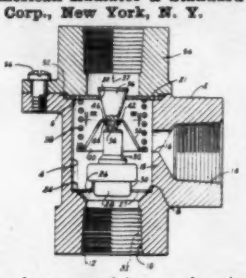


In a flow control device, a casing having a flow passageway of circular cross-section leading therethrough, a seat in said passageway facing in an upstream direction, a resilient flow control member in said passageway having a base portion seated on said seat and a cup-like wall portion extending in an upstream direction from said seat. . . .

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

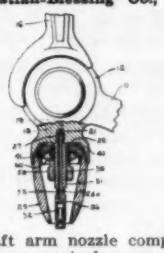
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

2,910,242. MIXING VALVE. John S. Preismuth, St. Clair Shores, and Daniel R. Terrance, Detroit, Mich., assignors to American Radiator & Standard Sanitary Corp., New York, N. Y.



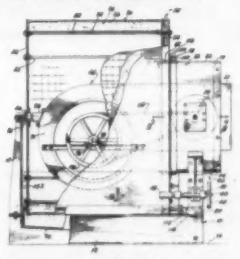
A valve comprising a housing internally contoured to define a cylindrical chamber extending from its inlet opening toward but terminating short of its outlet opening; said outlet opening being formed by a passage extending from the downstream end of said cylindrical chamber; the diameter of the chamber being greater than the diameter of the passage whereby to form a shoulder at the juncture therebetween. . . .

2,910,247. CARBONATED BEVERAGE DISPENSER. Harlow E. Allshouse, Chicago, and Lewis E. Mendonca, Mount Prospect, Ill., assignors to The Bastian-Blessing Co., Chicago.



1. A draft arm nozzle comprising a body having a central syrup passageway and a carbonated water passageway, a stem having a passageway in communication with said syrup passageway, an adjustable plug in the lower end of the stem for metering the flow of syrup from said stem, an element in said body having a lower wall defining a downwardly facing cavity having a central horizontal section. . . .

2,910,279. EVAPORATIVE COOLER. James L. Wood, Pittman, Nev., assignor to Manufacturers and Marketers, Inc., Grass Valley, Calif.



1. In an evaporative cooler, the combination of: supporting structure; a sump carried by said supporting structure; a drum mounted on said supporting structure for rotation about a substantially horizontal axis above said sump and extending downwardly into said sump so that successive peripheral portions of said drum dip downwardly into said sump as said drum rotates. . . .

2,910,627. AIR CONDITIONED PLUGGABLE UNIT ASSEMBLY. Benjamin H. Matteson, New Platz, and William P. Hughes, Wappingers Falls, N. Y., and William H. Ayer, North Scituate, Mass., assignors, by direct and mesne assignments, to Research Corp., New York, N. Y.

1. An air conditioned assembly comprising a module, pluggable units having front and rear portions said rear portions having mounted thereon heat-sensitive electrical elements, said

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SALES, ERECTION and service engineer with years of experience, air conditioning and heating. Have successfully managed men and business in these fields. Associate member ASHRAE. Desire permanent location in Illinois or Indiana, factory or distributor contractor. Free to travel. All replies acknowledged. BOX A6495, Air Conditioning, Heating & Refrigeration News.

AIR CONDITIONING & heating application engineer with 15 years' wholesale & retail sales background in both residential & commercial up to 125 tons. Have worked for manufacturer, distributor and contractor. Prefer southern United States. Write to: BOX A6496, Air Conditioning, Heating & Refrigeration News.

HEATING, AIR Conditioning, and refrigeration engineer and pilot, 35 years old. 13 years' experience in design, supervision, and estimating. Could cover large area with own airplane. Prefer southern location, but would consider other. Presently self-employed and would be available for immediate employment. BOX A6497, Air Conditioning, Heating & Refrigeration News.

MANUFACTURERS AGENT: Will devote 100% of time to one major line. Full sales and engineering qualifications in refrigeration and air conditioning. Base out of Cleveland, Ohio. Write to: BOX A6503, Air Conditioning, Heating & Refrigeration News.

EXECUTIVE 20 years' experience with leading refrigeration and air conditioning company. Outstanding success. Thoroughly grounded in engineering, sales and service. Desires position as director or district manager. Now resides in Northern Ohio, but will relocate for proper position. Write to: BOX A6504, Air Conditioning, Heating & Refrigeration News.

MARKETING - ENGINEER Executive. Age 36. Presently assistant to top executive officer $60 Million company. 15 years' experience sales, marketing, engineering, product planning, administration in air conditioning and refrigeration. Desires challenging association with reputable manufacturer, distributor, or contractor. N.Y. - Conn. - N.J. area preferred. M.S., General Business, BSME. BOX A6507, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

SALES REPRESENTATIVES Wanted. Western and North Central territory open for sales to hotel and restaurant equipment dealers. Beverage-Air milk coolers lead in school installations. Several new "merchandising" coolers now available for nation-wide distribution. All products warehoused and shipped F.O.B. Chicago. Available to either new or established representatives with limited number of lines. Brief resume, indicating other lines carried, will bring immediate response. All replies held in strict confidence. Address replies to: BEVERAGE-AIR SALES COMPANY, Interstate 85 near Hearon Circle (P.O. Box 4044), Spartanburg, S. C., Attention: Mr. H. L. Buffington, President.

REFRIGERATOR CABINET Engineer required for home freezer department. Must be familiar with production techniques in metal fabricating industry, tooling and materials used in refrigerators and freezers. Three to five years' experience preferred. State qualifications and salary requirements. All replies held in strictest confidence. Write, phone or wire information to Bryan E. Thompson, Personnel Director, Food Freezer Division, CARRIER CORPORATION, P. O. Box 2010, Tyler, Texas.

PRODUCT DEVELOPMENT Engineer with at least 3 years' experience. Capable of assuming responsibility for the design of specific project such as residential air conditioning, air to air heat pumps, and packaged air conditioners. Excellent opportunities for growth with well established Mid-west heating and air conditioning manufacturers. Please submit complete qualifications and salary requirements to Personnel Manager, MUELLER CLIMATROL, Div. of Worthington Corp., Box 401, Milwaukee 1, Wis.

MANUFACTURERS REPRESENTATIVES wanted in key trade areas to represent complete line of Water Tower Treatment Chemicals. Competitive prices and pre-season program on proven line offered by established aggressive company. Advise territory covered and lines. All inquiries in confidence. SKASOL CORPORATION, Box 80, Webster Groves 19, Mo.

SMALL MANUFACTURER of heat pumps (located in Los Angeles) has immediate opening for potential general manager. This position with a financially sound company represents a great challenge with commensurate salary opportunities. Write: BOX A6471, Air Conditioning, Heating & Refrigeration News.

MANUFACTURERS' REPRESENTATIVES wanted by prominent fractional horsepower motor manufacturer. Must have experience in air conditioning, heating, and appliance field. Change in distribution policy necessitates broader coverage. Write to: BOX A6498, Air Conditioning, Heating & Refrigeration News.

FIELD SALES Manager to establish new accounts and supervise activities of manufacturers' representatives throughout nation for prominent manufacturer of fractional horsepower motors. Must know air conditioning, heating, and appliance motor requirements. Must be aggressive and free to travel 70% of the time. Will pay salary and all expenses. Write: BOX A6499, Air Conditioning, Heating & Refrigeration News.

BROKERS • SALES Representatives • Well-known refrigeration manufacturer needs able representation in New England, New York State, and North-Central Midwest and sell territories protected. Our men must know the dealer and jobber level in commercial, restaurant, bar, and dairy fields. Line includes several coolers, merchandisers, display cases, etc. Excellent firm with growth potential. All replies will be confidential. Write: BOX A6500, Air Conditioning, Heating & Refrigeration News.

ASSISTANT SALES Manager to work with Vice President of Sales in supervising and developing national sales organization. Prefer graduate engineer in early thirties with experience in air conditioning and refrigeration sales. Unusual opportunity with leading eastern manufacturer. Write to: BOX A6501, Air Conditioning, Heating & Refrigeration News.

SUPERVISOR DESIRED by leading contract manufacturer for laboratory and model shop. Good future with aggressive company. Reply: BOX A6502, Air Conditioning, Heating & Refrigeration News.

SERVICEMAN FOR large Los Angeles firm. Experienced in all phases of commercial refrigeration and air conditioning. Year-round employment. Top pay and vacation. BOX A6505, Air Conditioning, Heating & Refrigeration News.

SERVICE ENGINEERS—Major organization has openings along Eastern seaboard for top flight air conditioning service and installation men. Only heavy experience with industrial equipment and control systems considered. Top rates with excellent opportunities to advance to management. Replies confidential, submit full details of experience to: BOX A6506, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

WANTED: MANUFACTURERS surplus, outdated or obsolete refrigeration items—expansion & water & shut-off valves, controls, relays, dehydrators, units, tubing, fittings, etc. All sales on a cash closeout basis, large or small quantity. Write or call: COMMERCIAL CONTROLS CO., 257 East 3rd Street, New York 9, New York, ORegon 3-7210.

EQUIPMENT FOR SALE

SPECIAL ANNOUNCEMENT, available now—replacement valve plate kits for hermetic units. Tecumseh compressors —⅛, ⅙, ⅕, ¼, ⅓ h.p. Also, pancake 1/10, ⅛ h.p. Replacement valve plate kits for other model hermetic units to follow. Write for information or see your local wholesaler. CHICAGO VALVE PLATE & SEAL CO. - 6960 W. Grand, Chicago 35, Illinois.

ONE 60 ton York air conditioning system, complete with York compressor and evaporative condenser, with Allen-Bradley two speed compressor motor controller. Cooling coils, blower fan and heating coil with American-Standard hot water furnace. 1,440,000 BTU input. This equipment at present is in a closed theater. About 7 years old. Contact HALE & BROWNING CONTRACTORS, Box 514, Logan, W. Va.

ATTENTION REFRIGERATION Servicemen: Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

THERMOSTATIC EXPANSION valve —Europe's best—½-1 ton F-12 now available stocked in U.S. Immediate delivery for manufacturers, contractors, territories open for representatives, wholesalers, 1 year guarantee, small, efficient, reliable—priced under market. Write BOX A6479, Air Conditioning, Heating & Refrigeration News.

Split Systems—Condensing Units

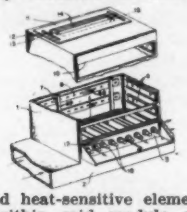
Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
Holly—Holly-General Co., Div. of Siegler Corp., P. O. Box 2098-D, Pasadena, Calif.													
AR3-22	28½	48½	18¾	22,000	...	250	5.0	3	3,000	Side	Tecumseh	3	...
AR3-34	28½	48½	18¾	26,000	3.5	275	5.0	4	3,000	Side	Tecumseh	3	...
AR3-42	28½	48½	18¾	40,700	3.4	275	5.0	5	3,500	Side	Tecumseh	3	...
AR3-48	28½	71¾	18¾	48,600	...	350	9.25	3	4,000	Side	Tecumseh	4	...
AR3-60	28½	71¾	18¾	60,000	6.4	350	9.25	4	5,000	Side	Tecumseh	5	...

Split Systems—Evaporator, Blower-Evaporator Units

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Capacity (B.t.u.h.)	Refrigerant Control	Net Weight	Coil Face Area (Sq. Ft.)	Coil Rows Deep	Blower C.f.m.	Blower R.p.m.	Motor Hp.	Air Filter Dimensions (In.)
V-22	16¼	16¼	20¼	22,000	X Valve	50	1.84	4	800	...	...	...
V-34	16¼	23¾	20¼	35,800	X Valve	73	3.20	3	1,200	...	...	...
V-42	16¼	23¾	20¼	40,400	X Valve	85	3.20	4	1,600	...	...	...
V-48	16¼	30¼	20¼	48,000	X Valve	120	3.20	4	1,600	...	...	...
V-60	16¼	30¼	20¼	60,000	X Valve	120	4.0	3	2,000	...	...	...

Patents (Cont.)

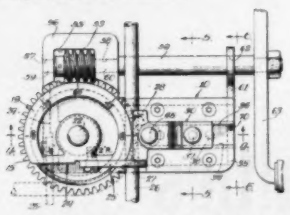
front portions being adapted to receive and support heat-producing electrical elements, said pluggable units being removably mounted in said module



with said heat-sensitive elements contained within said module and said heat-producing elements projecting externally from said module, and means for causing cooling medium to flow through said module and outwardly past said heat-producing elements.

REISSUES

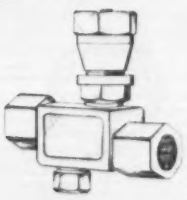
24,726. TUBE BENDING TOOL. George E. Franck, Riverside, Ill., assignor to The Imperial Brass Mfg. Co., a corporation of Illinois.



3. In a tube bending tool having a substantially rectangular bobdy member of aluminum alloy **arranged for** rotatably supporting **any one of a plurality of tube-engaging mandrels graduated to cooperate one each with each of a plurality of different diameter tubes to be bent, and for use with a plurality of tube-engaging shoes graduated to cooperate one each with each of a plurality of different diameter tubes to be bent, each shoe having an opening therein** [a mandrel], **shoe positioning** means [cooperable with the mandrel to form a tube bending orifice] comprising a steel plate secured to one face of the body member and provided with a groove extending radially of the axis of [the] rotation of [the] **a selected** mandrel **supported on the body member,** a pair of steel plates secured in spaced parallel relationship to the first-mentioned plate and each having an edge extending over the groove to form therewith a slot, a shoe holding member having a portion slidably engaging the slot and a portion spaced above the body member and extending toward the mandrel, a pin carried by the last-mentioned portion of the shoe holding member and movable [downwardly] to engage [an] **the** opening in any of [a] **the** plurality of shoes [of different sizes] removably to secure **a selected** shoe to the shoe holding member, and a second pin mounted on the shoe holding member and movable into engagement with any one of a plurality of holes formed along the bottom of the slot to secure the shoe holding member to the body member in any one of a plurality of positions each differently spaced from the axis of rotation of the mandrel to position [a] **the selected** shoe held therein in juxtaposed tube guiding cooperative relationship with the mandrel.

DESIGNS

186,489. FLOW CONTROL VALVE FOR FLUIDS. Charles F. Frye, Chicago, Ill.



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Williamson Features New Promotional Symbol And Project-Builder Furnace for 1960

CINCINNATI — An unusual selling and promotional symbol, together with a new economy line of project-builder furnaces, are highlighted in the new 1960 heating and cooling line announced by The Williamson Co.

The extensive line includes more than 100 models of gas, oil, and coal furnaces, and 97 cooling models, as well as more than 1,300 different duct, pipe, and fittings of "Seal-Tite" design, the company said.

The "Magic Brain" symbol "keynotes Williamson's modern automatic units that actually 'think for the homeowner' in providing increased comfort and economy," it was stated. "The symbol will be exploited in an intensive campaign."

Designed specially for the project-builder, the new "Wintermatic" furnaces, factory assembled and wired for "fast, simple" installation, are available in six different models, with gas and oil hi-boy and counterflow units.

Williamson will continue to offer its "Special," "Deluxe," and "Super" gas and oil furnace lines, "Gasaver" and "Oilsaver" lines, and coal Super furnaces, which together provide products for all price ranges.

The Williamson cooling line is said to include units to fit practically any residential or light commercial need: plenum "A," counterflow, duct, console, horizontal fan coil, "companion," and self-contained units.

* * *

Holly General Specifications

Presented here are the specifications on Holly General Co.'s line of split system air conditioners that arrived too late to appear in last week's Air Conditioning Specification's section.

May we suggest that you clip this listing and paste it into the blank space on page 19B of the Specifications section for future reference.

In addition to the vertical flow evaporators listed here, Holly is also marketing this year a line of counterflow evaporator units.

AIR ENGINEERING

AIR ENGINEERING . . .
a monthly magazine for Air Engineers

Covering the art and science of managing air to make it useful and healthful for man in structures and manufacturing processes.

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Ask your nearest AIR ENGINEERING representative for a Market and Media File Folder or write direct for detailed information.

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CHICAGO: 134 S. LaSalle St., FR. 2-8643-4
DETROIT: 450 W. Fort St., WO. 2-0924

BUSINESS NEWS PUBLISHING CO.
450 W. Fort St., Detroit 26, Michigan

Publishers of "Air Conditioning, Heating & Refrigeration News"

Electric Heat Show--

(Continued from Page 1, Col. 2)
the National Electrical Manufacturers Association.

The symposium will feature general sessions in the morning and seminars in the afternoon. Key speakers and their subjects follow.

MONDAY, MARCH 21

General Session—C. Fred Kreiser, chairman, NEMA Electric House Heating Equipment Section, and general sales manager, Edwin L. Wiegand Co.—will open the program with a talk entitled, "Igloos are Melting."

Joseph F. Miller, NEMA managing director, will give the address of welcome. Other top speakers will be S. B. Aronson, sales manager, Berko Electric Mfg. Corp., "Curtain Goes Up"; F. H. Sides, executive director, National Mineral Wool Association, "New Insulation Techniques"; Paul Emler, vice president, American Electric Power Service Corp., "New Industry-Wide Insulation Standards for Electric Heating and Air Conditioning"; and R. M. Wood, marketing consultant, Ebasco Services, Inc., "The Inside Story on Heat Losses."

Seminar #1—J. K. Shannahan, assistant commercial vice president, American Electric Power Service Corp., chairman.

R. W. Smith, manager-residential and farm sales, Metropolitan Edison Co., "Electric Heating Promotions That Work"; Niles Stiffler, commercial manager, Indiana & Michigan Electric Co., "Best Ideas on Conversion"; C. E. Anderson, manager-sales promotion, Virginia Electric & Power Co., "Additional Kilowatt Hours"; R. M. Wood, marketing consultant, Ebasco Services, Inc., "Latest Report on Load Characteristics"; Joseph A. Pape, product supervisor, heating and air conditioning, Commonwealth Edison Co., "How Salesmen Sell"; and W. J. Novak, associate editor, **Electrical Construction & Maintenance,** "Heat for Basements."

Seminar #2 — William Hogan, chief of the Bureau of Electrical Inspection, City of Chicago, chairman.

M. M. Brandon, president, Underwriters' Laboratories, Inc., "Interpreting the National Electrical Code for Electric Heating"; Frank Stetka, electrical field service engineer, National Fire Protection Association, "The Inspector's Responsibility"; and Lowell R. Mast, director of engineering, Electromode Div., Commercial Controls Corp., "UL and NEMA Standards —The Guide Posts."

Seminar #3—J. P. Wells, L. A. Woolley, Inc., and chairman of the National Association of Electrical Distributors Electric Heating Committee, chairman.

W. C. Wallis, vice president, Southern Supply Co., "The Merchandising of Electric Heat—Whose Responsibility?"; Herbert G. Blumberg, vice president-general manager, Cadillac Electric Supply Co., "Can the Electrical Distributor Afford to Lose the Electric Heating Market?"; and Phil M. Furbay, vice president and sales manager, The Furbay Electric Supply Co., "An Electrical Distributor Speaks on Electric Heat."

TUESDAY, MARCH 22

General Session—K. M. Spurrier, central area sales manager, Hunter Div., Robbins & Myers, Inc., chairman.

R. L. Boyd, product manager, Commercial Comfort Heating Div., Edwin L. Wiegand Co., "Unit Heaters Vs. Central Systems"; M. H. Wessel, sales manager, Electric Heating Div., Cavalier Corp., "Selecting Heater Types"; R. D. Graham, general manager, Electric Resistance Comfort Heating Section, General Electric Co., "Significance of NEMA Standards"; J. A. Rodgers, Jr., manager, technical sales, White-Rodgers Co., "Bi-Metal Operation Vs. Hydraulic Operation"; R. H. Luscombe, manager of marketing, Penn Controls, Inc., "Control of Humidity in Electric Home Heating"; Norman Boldt, manager-electrical products engineering, White-Rodgers Co., "Low Voltage Thermostats & Line Voltage Thermostats"; R. M. Locke, market manager, Minneapolis-Honeywell Regulator Co., "The Electric Heating Brain Center, Motel Heating Controls, The Weather Station"; and P. E. McCaughey, general sales manager, Wilcolator Co., "Built-in Thermostats and Wall-Mounted Thermostats."

Seminar #4—Lowell J. Endahl, manager, Power Use Section, National Rural Electric Cooperative Association, chairman.

R. M. Hausler, executive secretary, Rural Electric Consumer Publication, "Techniques on Selling Electric Heating"; Buford H. Martin, supervisor, Commercial and Industrial Power Section, Electrical Demonstration Branch, Tennessee Valley Authority, "Serving Heat in Large Quantity"; and Leland Olds, director, Energy Research Associates, "Setting Rates for Electric Heating.

Seminar #5—L. E. Blades, commercial sales specialist, Arkansas Power & Light Co., and chairman, Edison Electric Institute Electric Space Heating & Air Conditioning Committee, chairman.

Heat pumps from:

"Inspection Standpoint"—Fred J. Reed, chief engineer, Air-Conditioning & Refrigeration Institute.

"Manufacturer's Standpoint"—R. D. Roley, manager of product planning, Home Heating and Cooling Dept., General Electric Co. . .

"Utility Standpoint"—James M. Foreman, Jr., supervisor, Residential Promotion Div., Duke Power Co.

Seminar #6—"Electric Heating Comes of Age."

A. C. Sangster, coordinator, Space Heating and Air Conditioning, Commercial Sales, Detroit Edison Co., and P. R. Dwyer, heating and ventilating engineer, Sales Dept., and supervisor, steam sales, Detroit Edison Co.

Seminar #7—Charles P. Bobe, president, C. P. Bobe Co., and chairman of National Electrical Contractors Association Research Committee, chairman

"All Electric Means Just That."

F. E. Keith, chairman of the board, Keith Electric Co. and chairman of the NECA Marketing Committee, "Electric Heat's Place in Construction"; David Somes, president, Somes Electric Co., "Extent of the Electric Heat Market for Contractors"; Charles Hart, research assistant and associate technical editor of **Qualified Contractor,** "How the Contractors are Preparing for the Job"; and Joseph Felber, marketing assistant, National Electrical Contractors Association, "The NECA Electric Heat Sales Training Program."

WEDNESDAY, MARCH 23

General Session—R. A. Weiler, general manager, Sun-Tron Corp., chairman.

J. C. Gregory, executive director, Home Builders Association of Tampa, "Electric Heat Sells Homes"; France O. Anderson, senior technical consultant, electric space heating and air conditioning, Northern States Power Co., "Electric Heating in the Cold North"; Rev. Dean E. Burton, New Brunswick Church of Christ, "Electric Heating — A Blessing for Churches"; Don Kessell, apartment sales representative, Cleveland Electric Illuminating Co., "Electric Heating—An Economic Necessity for Apartment Buildings"; C. W. Cheatham, supervisor, heating and air conditioning, Alabama Power Co., "Electric Heat and Air Conditioning—Twin Blessings"; and S. B. Aronson, sales manager, Berko Electric Mfg. Corp., "Thoughts for Tomorrow."

In announcing the program, Aronson stated that a change has been made in Seminar #6 on Tuesday afternoon, March 22. The new panel will be directed toward architects, engineers, and builders.

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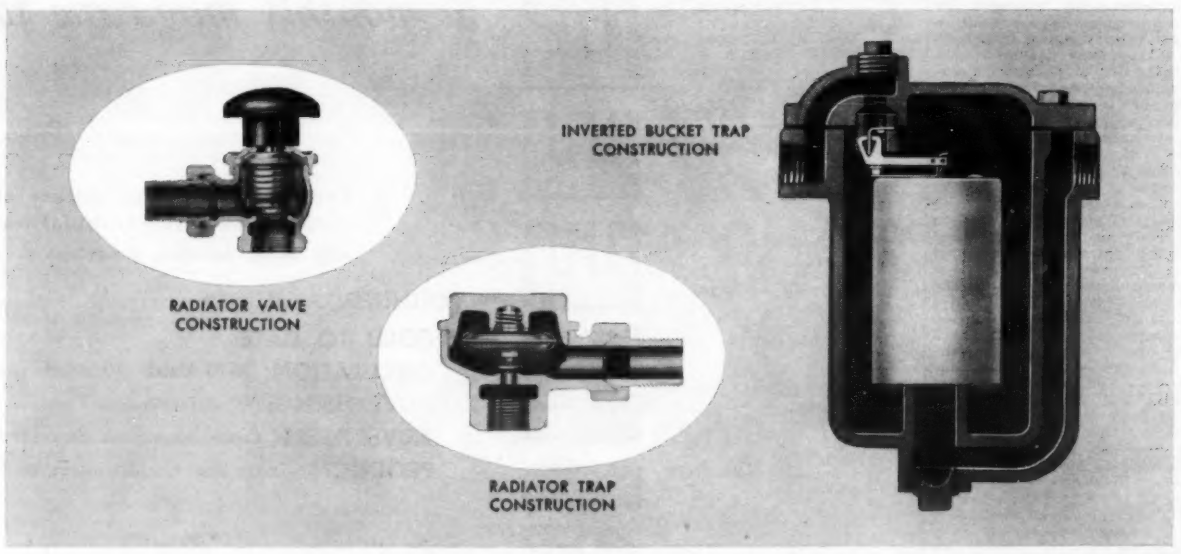

It's a hefty jump from 25" vacuum to 150 lbs. pressure. But it gives you an idea of the complete scope of quality Dunham-Bush Steam Heating Specialties.

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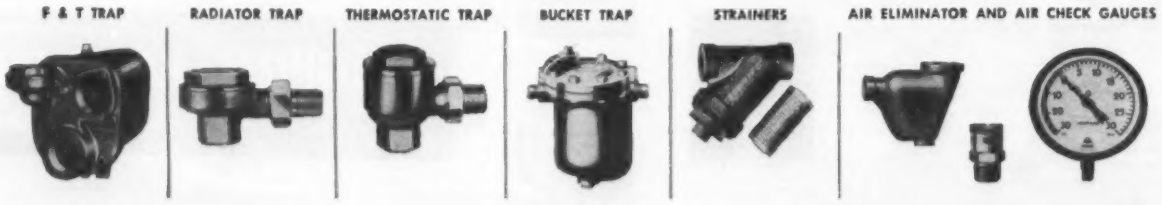

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